

RESOLUTION CONSULTANTS

To: Lora Fly, NAVFAC MIDLANT

From: Brian Caldwell, P.G., Resolution Consultants

Subject: **2016 Long Term Monitoring Remedial Process Optimization –
Navy Owned Wells, NWIRP Bethpage**

Date: 8 February 2017

INTRODUCTION

This memorandum documents a review and analysis of the Groundwater Long Term Monitoring (LTM) Program being performed jointly by the Navy and Northrop Grumman (NG) for NWIRP Bethpage. The purpose of this review is to execute a Remedial Process Optimization (RPO) evaluation of the LTM program, which includes analysis of the LTM results obtained to date, and provision of recommendations to optimize the LTM program. The RPO evaluation consisted of three elements: an analysis of the data and trends, an analysis of the first order change rates in concentrations and finally, development of recommendations. These three elements were exercised for all 69 of the Navy-owned wells currently included in the groundwater LTM program. The following provides procedural documentation and results of the RPO evaluation.

Analysis of LTM Data and Trends in the Data:

There are 69 Navy-owned wells under analysis for the current LTM report; these are shown in Figure 1. The full historical data record for these wells is included in Appendix A. LTM began as early as 1999-2000 for some wells, with others being added to the program as they were installed. Monitoring frequencies have ranged from quarterly to bi-annually for each well. Results from the Navy-owned wells have historically been included with NG-owned wells in monitoring reports prepared and submitted to the New York State Department of Environmental Conservation (NYSDEC) by NG.

A review of datasets in Appendix A indicates the primary parameter of concern being monitored in the LTM program, in terms of frequency and magnitude of detection, is trichloroethylene (TCE). Other parameters of concern that are being monitored above NYSDEC standards include tetrachloroethylene (PCE), Freon 113, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1-dichloroethane, 1,2-dichloroethene total, and cis-1,2-dichloroethene. Because of its importance as the primary parameter of concern, the RPO evaluation focused on TCE. The data for each well, as presented in Appendix A, was fully evaluated with respect to completeness prior to arranging it for subsequent trend analyses. Trend analysis was not conducted for wells with exclusively non-detect values.

Significant trends in the data were determined by performing a full Mann Kendall analysis (Gilbert, Richard O., 1987, Statistical Methods for Environmental Pollution Monitoring) of each dataset from each well. The Mann-Kendall test is a non-parametric statistical test for monotonic trends in the data record for a given well over time. The Mann-Kendall statistic (S) provides an indication of whether a trend exists and whether the trend is positive or negative at a given confidence level. The Mann Kendall statistic is calculated by iteratively comparing a data value to all others prior to and subsequent to that data value. Data values greater than that data value are assigned a score of +1, values less than that are assigned a score of -1, and identical values are assigned a score of 0. The resulting matrix of scores is summed to calculate the S statistic. The presence of a trend is determined based on the absolute value of the S statistic, the number of samples, and a critical probability value representing the confidence level. A positive value for S indicates an increasing trend in the data over time, whereas a negative value indicates a decreasing trend. A value of S near 0 suggests there is no significant upward or downward trend. The magnitude of S is therefore an indication of the strength of the trend. For the purposes of this RPO evaluation, the presence of a significant trend was tested at both an 80% (the acceptance or rejection of the null hypothesis is correct 80% of the time) and 90% (the acceptance or rejection of the null hypothesis is correct 90% of the time) confidence level. Precedence for use of these confidence levels can be found in the Wisconsin Department of Natural Resources (WDNR), 2003, Guidance on Natural Attenuation for Petroleum Releases. The statistical software for this RPO evaluation was originally developed by the WDNR; the original version has been expanded to test up to 18 sampling events.

In the event that a statistically significant trend could not be identified, the data were tested for stability by calculating the coefficient of variation (CV; the ratio of the standard deviation to the

mean, a measure of the scatter of the data). If the CV is less than 1, the well concentrations are considered stable; if it is greater than 1, they are considered not stable.

Even though the Mann Kendall (MK) test is non-parametric and therefore is not sensitive to the distribution of the data, it is clearly sensitive to the relative differences in magnitude between data values for a given well. This can be a critical concern when detected values are low and are close in magnitude to the detection limit and when intra-well detection limits are variable. To account for this potential bias, all non-detects (NDs) for a given well were assigned ½ of the lowest reported non-detect limit for that well.

In addition to all of the historical data for each well, Appendix A identifies the dataset used for the MK testing of each well (labeled as “MK Dataset” for each well), consisting of a maximum of the most recent 18 sampling events with the non-detected values corrected as described above. The results of the MK testing are provided in Appendix B.

Table 1 provides a summary of the results of the MK testing performed for each well at both 80% and 90% confidence. In addition, for wells that were tested that did not exhibit a statistically significant trend, the results of the stability test is provided. Note that some wells were not tested primarily because they have exhibited non-detects for a significant time – a test would have simply trended a flat line and resulted in a “stable” determination. The rationale for a well not being tested is provided in Table 2.

FIRST ORDER CHANGE RATES IN CONCENTRATION

The use of the first order change in a temporal dataset is a predictive tool that can be applied to concentration over time (Newell, Charles J., et al., Calculation and Use of First Order Rate Constants for Monitored Natural Attenuation Studies, [EPA/540/S-02/500] November 2002). This is useful to determine the efficacy of a remediation system, to determine if natural attenuation is operating effectively, to screen potential remedial alternatives, and to estimate future concentrations under both passive and active remediation scenarios. The basis of the technique utilizes the regression of a dependent variable (concentration) over an independent variable (time). Typically, a linear regression technique is applied (although non-linear techniques can be applied as well), and a least squares fit regression line (the line that has the smallest sum of the squares of

the residuals of the data relative to the line) is used to calculate the first order equation for the change rate. The calculated change rate for each well is provided in Appendix B along with the MK analysis. Plots of the linear regression line for each well are provided in Appendix C; natural log concentrations are presented for wells showing a decreasing trend, whereas linear arithmetic concentrations are presented for wells showing an increasing or no trend.

Once the slope in the first order equation is known, it can be utilized to predict future concentrations (assuming no change in conditions, such as implementation of a different remedy, or introduction of another source mass). A decreasing slope indicates an exponential loss of mass, and the first order slope is calculated with the concentration data transformed to lognormal (this allows the first order change rate to be solved with a linear equation, which is applied over the time of concern to calculate future concentrations). An increasing slope indicates an increase in mass, and the increase is assumed to be linear (a constant introduction of mass per day) unless the data suggest otherwise (the data exhibit large residual values to the linear regression line). In the case of an increasing slope, a source term is calculated using the change in concentration over the time span in the data record and this is applied linearly, multiplied by the first order change slope per day, to calculate future concentrations.

Table 1 provides important information regarding the first order concentration rate change analyses (for wells with a statistical trend), including the change rate, the dates in the test record dataset, the number of days in the test record, the initial concentration in the test record, the most recent concentration in the test record, the highest concentration and its date of detection, the projected concentration in 2021, and the time to reach the Maximum Concentration Levels (MCL) of 5 ppb for TCE.

RECOMMENDATIONS

The current sampling frequency for each of the Navy-owned wells and recommendations for changes in frequency or status quo are provided in Table 1. A certain number of the wells listed in Table 1 are sampled on a frequency determined by other programs (e.g., BPOWs per the Public Water Supply Contingency Plan requirements; RE108 hot spot wells) and no recommendations are

shown for those wells. The following general decision rules were applied to all remaining LTM program wells along with recommendations for future sampling:

1. No Trend; stable; most recent result below MCL = annual;
2. No Trend; stable; above MCL = semi-annual;
3. No Trend; not stable; above MCL = semi-annual;
4. No Trend; not stable; below MCL = annual;
5. Increasing Trend; change rate >.001/day; below MCL = semi-annual;
6. Increasing Trend; change rate <.001/day; below MCL = annual;
7. Increasing Trend; above MCL = semi-annual;
8. Decreasing Trend; below MCL ; highest historical detection below MCL = eliminate;
9. Decreasing Trend; below MCL ; highest historical detection above MCL = semi-annual;
10. Decreasing Trend; above MCL = semi-annual;
11. Not MK Tested; >75% NDs in last 3 years = eliminate;
12. Not MK Tested; >75% ND; < 3 years of sample data = annual;
13. Not MK Tested; all NDs; > 3 years of sample data = eliminate;
14. Not MK Tested; all NDs; < 3 years of sample data = annual;

Tables



Table 1
2016 Long Term Monitoring Analysis
Trichloroethene (TCE)
NWIRP Bethpage, Navy Owned Wells

8 February 2017

Well	MK 80% Result	MK 90% Result	Stable?	Change Rate/day	Dates in Test Record	Days in Test Record	Initial [X] (ppb)	Most Recent [X] (ppb)	Highest Detection in ppb (Date)	[X] in 2021 (ppb)	Time to Reach MCL (yrs)	Current Monitoring Frequency	Recommended Monitoring Frequency	Applied Decision Rule
FW-03	NT	NT	Y	na	9/20/05 - 4/27/16	3872	3	2.2	33 (1/3/02)	na	na	Annual	Annual	1
GM-16SR	Increasing	NT	na	0.00209	7/24/03 - 4/10/06	991	5.0 (ND)	4	5 (9/7/05)	6.8	na	Not Sampled	Semi-Annual	5
GM-17SR	Not MK Tested	Not MK Tested	na	na	3/29/04 - 3/15/06	na	5.0 (ND)	5.0 (ND)	0.7 (9/7/05)	na	na	Not Sampled	Eliminate	11
GM-78S	NT	NT	Y	na	12/23/05 - 4/28/16	3779	5.0 (ND)	0.45	0.57 (6/1/15)	na	na	Annual	Annual	1
HN-40S	Not MK Tested	Not MK Tested	na	na	4/13/06 - 4/13/16	na	5.0 (ND)	5.0 (ND)	4 (3/17/06)	na	na	Annual	Eliminate	11
HN-42S	Not MK Tested	Not MK Tested	na	na	2/7/07 - 4/26/16	na	5.0 (ND)	5.0 (ND)	1.5 (5/12/14)	na	na	Annual	Eliminate	11
GM-17I	Decreasing	Decreasing	na	-0.00028	2/9/07 - 5/2/16	3370	5.0 (ND)	0.65	1.7 (4/22/15)	0.4	na	Semi-Annual	Eliminate	8
GM-74I	Decreasing	Decreasing	na	-0.00065	2/27/07 - 4/13/16	3333	5.0 (ND)	0.62	0.79 (12/9/13)	0.2	na	Semi-Annual	Eliminate	8
GM-78I	NT	NT	Y	na	12/23/05 - 4/28/16	3779	0.7	0.38	7 (1/9/02)	na	na	Annual	Annual	1
GM-79I	Decreasing	NT	na	-0.00038	11/5/09 - 4/13/16	2351	5.0 (ND)	1.0 (ND)	30 (2/14/12)	0.3	na	Semi-Annual	Semi-Annual	9
HN-24I	NT	NT	Y	na	10/6/04 - 4/28/16	4222	36	15	290 (10/15/2002)	na	na	Annual	Semi-Annual	2
HN-29I	Decreasing	NT	na	-0.00031	9/27/00 - 3/14/06	1994	2	0.9	2 (1/7/04)	0.5	na	Semi-Annual	Eliminate	8
HN-40I	Increasing	NT	na	0.00299	4/13/06 - 4/13/16	3653	3	5.0 (ND)	35 (12/22/03)	2.7	na	Annual	Semi-Annual	5
HN-42I	Decreasing	Decreasing	na	-0.00091	2/7/07 - 4/26/16	3366	10	0.71	20 (7/8/09)	0.1	na	Annual	Semi-Annual	9
BPOW1-1	NT	NT	Y	na	11/30/11 - 6/8/16	1652	1.1	1.1	4 (4/30/04)	na	na	Quarterly	Quarterly	*
BPOW1-2	NT	NT	Y	na	2/20/12 - 6/7/16	1569	0.33	0.85	0.85 (6/7/16)	na	na	Quarterly	Quarterly	*
BPOW1-3	Not MK Tested	Not MK Tested	na	na	11/30/11 - 6/10/16	na	0.5 (ND)	1.0 (ND)	1.4 (7/10/06)	na	na	Quarterly	Quarterly	*
BPOW1-4	Not MK Tested	Not MK Tested	na	na	12/1/11 - 6/21/16	na	0.5 (ND)	1.0 (ND)	All ND	na	na	Quarterly	Quarterly	*
BPOW1-5	Not MK Tested	Not MK Tested	na	na	12/1/11 - 6/17/16	na	0.5 (ND)	1.0 (ND)	All ND	na	na	Quarterly	Quarterly	*
BPOW1-6	Not MK Tested	Not MK Tested	na	na	12/2/11 - 6/17/16	na	0.5 (ND)	1.0 (ND)	All ND	na	na	Quarterly	Quarterly	*
GM-15D	Decreasing	Decreasing	na	-0.00032	3/11/08 - 6/30/16	3033	5.0 (ND)	1.0 (ND)	13 (1/30/2001)	0.3	na	Semi-Annual	Semi-Annual	9
GM-17D	Decreasing	Decreasing	na	-0.00032	2/9/07 - 5/2/16	3370	0.36	0.61	1 (9/1/2005)	0.3	na	Semi-Annual	Eliminate	8
GM-18D	Decreasing	Decreasing	na	-0.00059	2/13/07 - 6/14/16	3409	7	0.39	12 (4/11/06)	0.1	na	Semi-Annual	Semi-Annual	9
GM-21D	Increasing	NT	na	0.00051	3/20/09 - 5/5/16	2603	0.69	1.7	3 (7/17/03)	2.4	na	Annual	Annual	6
GM-39DA	Decreasing	Decreasing	na	-0.00081	2/13/07 - 5/3/16	3064	17	6.1	19 (3/18/08)	0.3	0.67	Annual	Semi-Annual	10
GM-39DB	NT	NT	Y	na	2/28/07 - 5/3/16	3352	43	21	94 (5/9/11)	na	na	Annual	Semi-Annual	2
GM-73D	NT	NT	N	na	2/28/07 - 6/29/16	3409	13	7.9	780 (10/18/02)	na	na	Semi-Annual	Semi-Annual	3
GM-74D	Decreasing	Decreasing	na	-0.00034	2/27/07 - 4/13/16	3333	5.0 (ND)	1.2	81 (2/5/01)	0.7	na	Semi-Annual	Semi-Annual	9
GM-79D	Decreasing	Decreasing	na	-0.00021	11/5/09 - 4/13/16	2351	33	25.9	110 (4/7/03)	17.7	21.56	Semi-Annual	Semi-Annual	10
HN-29D	Decreasing	Decreasing	na	-0.00032	9/27/00 - 3/14/06	1994	1	5.0 (ND)	2 (12/20/02)	1.4	na	Semi-Annual	Eliminate	8
BPOW2-1	Not MK Tested	Not MK Tested	na	na	12/5/11 - 6/10/16	na	0.5 (ND)	1.0 (ND)	2.4 (6/15/05)	na	na	Quarterly	Quarterly	*
BPOW2-2	Not MK Tested	Not MK Tested	na	na	6/19/07 - 6/2/16	na	0.59	1.0 (ND)	1.4 (7/12/06)	0.1	na	Quarterly	Quarterly	*
BPOW2-3	Not MK Tested	Not MK Tested	na	na	12/22/11 - 6/16/16	na	0.56	1.0 (ND)	.56 (12/22/11)	0.2	na	Quarterly	Quarterly	*
BPOW3-1	Not MK Tested	Not MK Tested	na	na	8/2/11 - 6/16/16	na	0.5 (ND)	1.0 (ND)	All ND	na	na	Quarterly	Quarterly	*
BPOW3-2	Not MK Tested	Not MK Tested	na	na	12/6/11 - 6/16/16	na	0.5 (ND)	1.0 (ND)	All ND	na	na	Quarterly	Quarterly	*

Well	MK 80% Result	MK 90% Result	Stable?	Change Rate/day	Dates in Test Record	Days in Test Record	Initial [X] (ppb)	Most Recent [X] (ppb)	Highest Detection in ppb (Date)	[X] in 2021 (ppb)	Time to Reach MCL (yrs)	Current Monitoring Frequency	Recommended Monitoring Frequency	Applied Decision Rule
BPOW3-3	Not MK Tested	Not MK Tested	na	na	12/6/11 - 6/21/16	na	0.5 (ND)	1.0 (ND)	All ND	na	na	Quarterly	Quarterly	*
BPOW3-4	Increasing	Increasing	na	0.01140	12/7/11 - 6/22/16	1659	46	63	80.7 (12/11/15)	81.7	na	Quarterly	Quarterly	*
BPOW4-1	Not MK Tested	Not MK Tested	na	na	11/10/09 - 12/2/13	na	0.5 (ND)	0.5 (ND)	All ND	na	na	No Longer Exists	na	na
BPOW4-2	Not MK Tested	Not MK Tested	na	na	5/21/09 - 12/2/13	na	0.5 (ND)	0.5 (ND)	0.3 (5/22/13)	na	na	No Longer Exists	na	na
BPOW4-1R	Increasing	Increasing	na	0.00068	12/15/14 - 5/31/16	533	0.84	1.1	1.1 (5/31/16)	2	na	Semi-Annual	Semi-Annual	*
BPOW4-2R	Increasing	Increasing	na	0.00248	12/15/14 - 6/1/16	534	0.73	1.9	1.9 (6/1/16)	5.9	na	Semi-Annual	Semi-Annual	*
GM-15D2	Decreasing	Decreasing	na	-0.00004	3/11/08 - 4/13/16	2955	10	8.8	17 (3/28/02)	8.2	42.94	Semi-Annual	Semi-Annual	10
GM-73D2	Decreasing	Decreasing	na	-0.00018	2/28/07 - 5/6/16	3355	67	33.2	1200 (11/22/02)	24	29.2	Semi-Annual	Semi-Annual	10
GM-74D2	NT	NT	Y	na	2/27/07 - 5/5/16	3355	7.4	7.2	12 (3/20/06)	na	na	Semi-Annual	Semi-Annual	2
GM-75D2	Decreasing	Decreasing	na	-0.00078	8/21/09 - 5/10/16	2454	120	18.8	1500 (10/3/02)	4.5	4.67	Semi-Annual	Semi-Annual	10
RE103D1	NT	NT	Y	na	3/11/14 - 6/23/16	835	1000	930	1300 (12/10/14)	na	na	Quarterly	Quarterly	*
RE103D2	NT	NT	Y	na	3/11/14 - 6/23/16	835	750	890	1300 (9/23/14)	na	na	Quarterly	Quarterly	*
RE103D3	NT	NT	Y	na	3/11/14 - 6/23/16	835	430	500	600 (12/10/14)	na	na	Quarterly	Quarterly	*
RE104D1	Decreasing	Decreasing	na	-0.00064	3/12/14 - 6/21/16	832	150	92	160 (6/12/14)	28.4	12.41	Quarterly	Quarterly	*
RE104D2	Increasing	Increasing	na	0.00853	3/12/14 - 6/21/16	832	2.6	9	9 (6/21/16)	23	na	Quarterly	Quarterly	*
RE104D3	Not MK Tested	Not MK Tested	na	na	3/12/14 - 6/21/16	na	0.5 (ND)	0.5 (ND)	0.46 (3/23/15)	na	na	Quarterly	Quarterly	*
RE105D1	NT	NT	Y	na	3/11/14 - 6/27/16	839	160	110	160 (3/11/14)	na	na	Quarterly	Quarterly	*
RE105D2	Increasing	Increasing	na	0.96046	3/11/14 - 6/27/16	839	620	1800	1900 (9/28/15)	4366.7	na	Quarterly	Quarterly	*
RE108D1	Decreasing	NT	Y	-0.00026	3/12/14 - 6/27/16	838	130	82	140 (3/27/15)	51.0	29.45	Quarterly	Quarterly	*
RE108D2	Decreasing	NT	Y	-0.00025	3/12/14 - 6/27/16	838	4600	3000	4600 (3/12/14)	1892.2	69.4	Quarterly	Quarterly	*
TT101D	Increasing	Increasing	na	0.01998	3/13/14 - 6/21/16	831	52	73	74 (12/17/15)	119.1	na	Quarterly	Quarterly	*
TT101D1	Increasing	Increasing	na	0.06869	3/13/14 - 6/21/16	831	170	190	200 (12/17/15)	233.9	na	Quarterly	Quarterly	*
TT101D2	Increasing	Increasing	na	0.41577	3/13/14 - 6/21/16	831	250	690	690 (6/21/16)	1656.3	na	Quarterly	Quarterly	*
TT102D1	Not MK Tested	Not MK Tested	na	na	6/27/13 - 5/19/16	na	0.5 (ND)	0.5 (ND)	All ND	na	na	Semi-Annual	Eliminate	13
TT102D2	Not MK Tested	Not MK Tested	na	na	6/27/13 - 5/19/16	na	0.54	0.5 (ND)	0.54 (6/27/13)	na	na	Semi-Annual	Eliminate	11
RE120D1	Decreasing	Decreasing	na	-0.00015	12/12/14 - 6/22/16	559	1300	1200	1300 (12/18/15)	912.4	99.99	Quarterly	Quarterly	*
RE120D2	Decreasing	NT	na	-0.00038	12/12/14 - 6/22/16	559	900	720	900 (12/12/14)	358.8	35.68	Quarterly	Quarterly	*
RE120D3	NT	NT	N	na	12/12/14 - 6/22/16	559	3.4	46	120 (9/29/15)	na	na	Quarterly	Quarterly	*
RE122D1	Increasing	Increasing	na	0.08878	3/24/15 - 6/22/16	456	570	610	610 (6/22/16)	770.1	na	Quarterly	Quarterly	*
RE122D2	Increasing	Increasing	na	1.80712	3/24/15 - 6/22/16	456	4600	5500	5500 (6/22/16)	9102.0	na	Quarterly	Quarterly	*
RE122D3	NT	NT	Y	na	3/24/15 - 6/22/16	456	6.8	7.4	10 (9/30/15)	na	na	Quarterly	Quarterly	*
RE123D1	NT	NT	Y	na	9/29/15 - 6/20/16	265	12	7.4	12 (9/29/15)	na	na	Quarterly	Quarterly	*
RE123D2	NT	NT	Y	na	9/29/15 - 6/20/16	265	1.4	1.5	1.9 (3/17/16)	na	na	Quarterly	Quarterly	*
RE123D3	Not MK Tested	Not MK Tested	na	na	9/29/15 - 6/20/16	na	0.5 (ND)	0.5 (ND)	All ND	na	na	Quarterly	Quarterly	*

Note: * wells sampled on a frequency determined by other programs (e.g. Public Water Supply Contingency Plan)

NT = No Trend

ND = Non-Detect Value

na = not applicable



Table 2
2016 Long Term Monitoring Analysis
Wells Not MK Tested for TCE Trends
NWIRP Bethpage, Navy Owned Wells

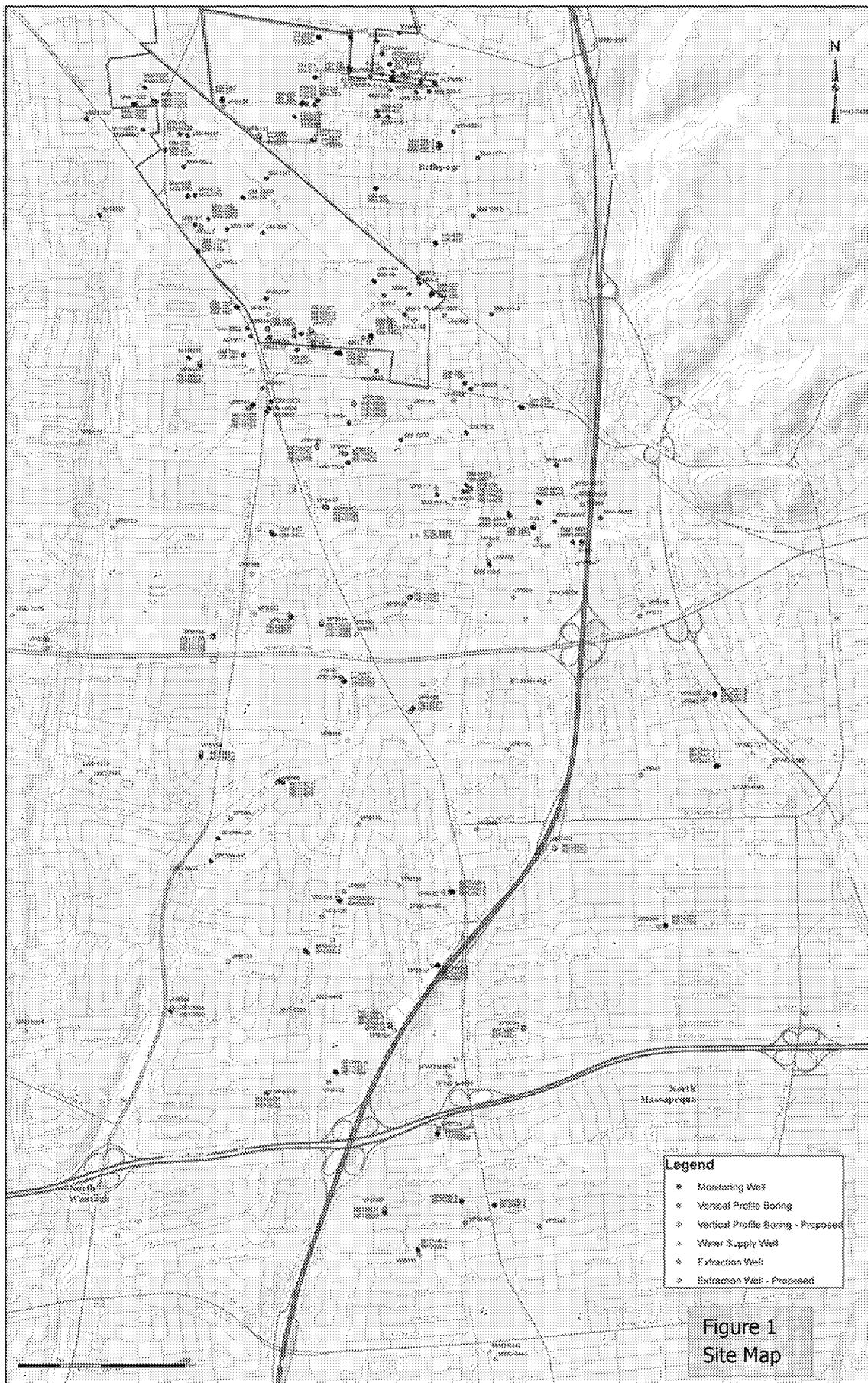
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Well	Rationale	Decision Rule
GM-17SR	88% ND	11
HN-40S	94% ND	11
HN-42S	89% ND	11
BPOW1-3	Has been ND since 12/8/10	*
BPOW1-4	100% ND	*
BPOW1-5	100% ND	*
BPOW1-6	100% ND	*
BPOW2-1	Has been ND since 6/14/11	*
BPOW2-2	Has been ND since 12/2/2011	*
BPOW2-3	84% ND	*
BPOW3-1	100% ND	*
BPOW3-2	100% ND	*
BPOW3-3	100% ND	*
BPOW4-1	No longer exists, replaced by BPOW4-1R	*
BPOW4-2	No longer exists, replaced by BPOW4-2R	*
RE104D3	90% ND	*
TT102D1	100% ND	13
TT102D2	83% ND	11
RE123D3	100% ND	*

Note: * wells sampled on a frequency determined by other programs (e.g. Public Water Supply Contingency Plan)

ND = Non-detect

Figures



Appendices

Appendix A
Data Sets Used For Trends and Projections

Well # FW-03
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
6/28/2000	49	64	2	Y		
9/27/2000	49	64	3	Y		
2/1/2001	49	64	14	Y		
5/31/2001	49	64	28	Y		
10/4/2001	49	64	27	Y		
1/3/2002	49	64	33	Y		
4/11/2002	49	64	19	Y		
7/9/2002	49	64	16	Y		
3/20/2003	49	64	6	Y		
7/21/2003	49	64	2	Y		
10/14/2003	49	64	3	Y		
1/7/2004	49	64	1	Y		
10/6/2004	49	64	4	Y		
4/12/2005	49	64	3	Y		
9/20/2005	49	64	3	Y	9/20/2005	3
3/14/2006	49	64	4	Y	3/14/2006	4
10/5/2006	49	64	3	Y	10/5/2006	3
3/6/2007	49	64	5.6	Y	3/6/2007	5.6
9/11/2007	49	64	5	N	9/11/2007	2.5
3/13/2008	49	64	5	Y	3/13/2008	5
9/5/2008	49	64	5	N	9/5/2008	2.5
2/27/2009	49	64	3.4	Y	2/27/2009	3.4
8/25/2009	49	64	2.8	Y	8/25/2009	2.8
1/29/2010	49	64	2.5	Y	1/29/2010	2.5
8/6/2010	49	64	2.3	Y	8/6/2010	2.3
5/5/2011	49	64	3.1	Y	5/5/2011	3.1
12/28/2011	49	64	3.2	Y	12/28/2011	3.2
2/17/2012	49	64	3.4	Y	2/17/2012	3.4
6/10/2013	49	64	3.5	Y	6/10/2013	3.5
5/19/2014	49	64	4.5	Y	5/19/2014	4.5
6/2/2015	49	64	2.4	Y	6/2/2015	2.4
4/27/2016	49	64	2.2	Y	4/27/2016	2.2

Well # GM-16SR
TCE Results and
Mann-Kendall Dataset

Well	Date	Top Screen	Bottom Screen	TCE	Detect ?		TCE MK Dataset	
GM-16SR	7/24/2003	60	70	5	N		7/24/2003	2.5
GM-16SR	10/8/2003	60	70	5	N		10/8/2003	2.5
GM-16SR	1/9/2004	60	70	5	N		1/9/2004	2.5
GM-16SR	3/29/2004	60	70	2	Y		3/29/2004	2
GM-16SR	10/1/2004	60	70	5	N		10/1/2004	2.5
GM-16SR	4/11/2005	60	70	5	N		4/11/2005	2.5
GM-16SR	9/7/2005	60	70	5	Y		9/7/2005	5
GM-16SR	4/10/2006	60	70	4	Y		4/10/2006	4

**Not Tested, Non-Detect Values:
GM-17SR**

Well # GM-78S
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
6/4/2001	60	70	1	Y		
9/27/2001	60	70	2	Y		
1/8/2002	60	70	6	Y		
4/9/2002	60	70	7	Y		
6/18/2002	60	70	8	Y		
10/10/2002	60	70	6	Y		
12/19/2002	60	70	5	Y		
3/19/2003	60	70	3	Y		
7/15/2003	60	70	3	Y		
10/16/2003	60	70	1	Y		
1/8/2004	60	70	5	N		
3/19/2004	60	70	5	N		
7/2/2004	60	70	5	N		
9/30/2004	60	70	0.7	Y		
12/28/2004	60	70	0.7	Y		
4/13/2005	60	70	0.9	Y		
6/1/2005	60	70	1	Y		
9/7/2005	60	70	5	Y		
12/23/2005	60	70	5	Y	12/23/2005	2.5
3/15/2006	60	70	0.3	Y	3/15/2006	0.3
9/26/2006	60	70	0.9	Y	9/26/2006	0.9
2/8/2007	60	70	1.1	Y	2/8/2007	1.1
9/25/2007	60	70	5	N	9/25/2007	2.5
3/12/2008	60	70	5	N	3/12/2008	2.5
8/14/2008	60	70	5	N	8/14/2008	2.5
2/24/2009	60	70	5	N	2/24/2009	2.5
8/17/2009	60	70	5	N	8/17/2009	2.5
1/29/2010	60	70	0.28	Y	1/29/2010	0.28
7/16/2010	60	70	0.33	Y	7/16/2010	0.33
5/5/2011	60	70	5	N	5/5/2011	2.5
12/9/2011	60	70	5	N	12/9/2011	2.5
2/16/2012	60	70	5	N	2/16/2012	2.5
5/29/2013	60	70	5	N	5/29/2013	2.5
5/15/2014	60	70	5	N	5/15/2014	2.5
6/1/2015	60	70	0.57	Y	6/1/2015	0.57
4/28/2016	60	70	0.45	Y	4/28/2016	0.45

Not Tested, Non-Detect Values:
HN-40S
HN-42S

Well # GM-17I
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?		TCE MK Dataset
9/29/2000	99.5	119.5	10	N		
1/31/2001	99.5	119.5	10	N		
5/2/2001	99.5	119.5	10	N		
10/2/2001	99.5	119.5	10	N		
12/27/2001	99.5	119.5	5	N		
4/2/2002	99.5	119.5	5	N		
6/18/2002	99.5	119.5	5	N		
10/7/2002	99.5	119.5	5	N		
12/27/2002	99.5	119.5	5	N		
3/28/2003	99.5	119.5	2	Y		
7/28/2003	99.5	119.5	5	N		
9/30/2003	99.5	119.5	5	N		
12/30/2003	99.5	119.5	0.6	Y		
4/6/2004	99.5	119.5	5	N		
7/9/2004	99.5	119.5	5	N		
10/29/2004	99.5	119.5	5	N		
1/10/2005	99.5	119.5	5	N		
3/25/2005	99.5	119.5	5	N		
6/7/2005	99.5	119.5	5	N		
9/1/2005	99.5	119.5	2	Y		
12/20/2005	99.5	119.5	5	N		
3/8/2006	99.5	119.5	5	N		
9/15/2006	99.5	119.5	5	N		
2/9/2007	99.5	119.5	5	N	2/9/2007	2.5
9/13/2007	99.5	119.5	5	N	9/13/2007	2.5
3/7/2008	99.5	119.5	5	N	3/7/2008	2.5
8/11/2008	99.5	119.5	5	N	8/11/2008	2.5
2/17/2009	99.5	119.5	5	N	2/17/2009	2.5
8/12/2009	99.5	119.5	0.59	Y	8/12/2009	0.59
2/16/2010	99.5	119.5	0.45	Y	2/16/2010	0.45
7/29/2010	99.5	119.5	5	N	7/29/2010	2.5
5/11/2011	99.5	119.5	5	N	5/11/2011	2.5
12/21/2011	99.5	119.5	5	N	12/21/2011	2.5
2/15/2012	99.5	119.5	5	N	2/15/2012	2.5
9/10/2012	99.5	119.5	0.45	Y	9/10/2012	0.45
6/11/2013	99.5	119.5	0.86	Y	6/11/2013	0.86
12/19/2013	99.5	119.5	0.72	Y	12/19/2013	0.72
5/5/2014	99.5	119.5	5	N	5/5/2014	2.5
10/23/2014	99.5	119.5	0.76	Y	10/23/2014	0.76
4/22/2015	99.5	119.5	1.7	Y	4/22/2015	1.7
5/2/2016	99.5	119.5	0.65	Y	5/2/2016	0.65

Well # GM-74I
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect ?	TCE MK Dataset	
10/5/2000	94	114	10	N		
2/5/2001	94	114	10	N		
6/5/2001	94	114	10	N		
10/9/2001	94	114	10	N		
1/4/2002	94	114	5	N		
4/4/2002	94	114	5	N		
6/19/2002	94	114	5	N		
10/9/2002	94	114	5	N		
1/13/2003	94	114	5	N		
3/25/2003	94	114	5	N		
7/24/2003	94	114	5	N		
9/29/2003	94	114	0.4	Y		
1/13/2004	94	114	5	N		
3/22/2004	94	114	5	N		
7/6/2004	94	114	5	N		
11/1/2004	94	114	5	N		
1/12/2005	94	114	5	N		
3/22/2005	94	114	5	N		
6/2/2005	94	114	5	N		
8/18/2005	94	114	5	N		
12/21/2005	94	114	5	N		
3/20/2006	94	114	5	N		
9/14/2006	94	114	5	N		
2/27/2007	94	114	5	N	2/27/2007	2.5
9/7/2007	94	114	5	N	9/7/2007	2.5
3/17/2008	94	114	5	N	3/17/2008	2.5
8/18/2008	94	114	5	N	8/18/2008	2.5
2/17/2009	94	114	5	N	2/17/2009	2.5
8/10/2009	94	114	5	N	8/10/2009	2.5
1/28/2010	94	114	5	N	1/28/2010	2.5
7/14/2010	94	114	5	N	7/14/2010	2.5
5/4/2011	94	114	5	N	5/4/2011	2.5
12/16/2011	94	114	0.28	Y	12/16/2011	0.28
2/10/2012	94	114	5	N	2/10/2012	2.5
8/28/2012	94	114	0.34	Y	8/28/2012	0.34
5/23/2013	94	114	0.27	Y	5/23/2013	0.27
12/9/2013	94	114	0.79	Y	12/9/2013	0.79
5/8/2014	94	114	0.3	Y	5/8/2014	0.3
10/17/2014	94	114	0.63	Y	10/17/2014	0.63
4/21/2015	94	114	0.76	Y	4/21/2015	0.76
4/13/2016	94	114	0.62	Y	4/13/2016	0.62

Well # GM-78I
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset
6/4/2001	89	109	0.8	Y	
9/27/2001	89	109	3	Y	
1/9/2002	89	109	7	Y	
4/9/2002	89	109	5	Y	
6/18/2002	89	109	4	Y	
10/10/2002	89	109	5	Y	
12/19/2002	89	109	4	Y	
3/19/2003	89	109	4	Y	
7/15/2003	89	109	3	Y	
10/16/2003	89	109	2	Y	
1/8/2004	89	109	0.8	Y	
3/19/2004	89	109	5	N	
7/2/2004	89	109	5	N	
9/30/2004	89	109	0.6	Y	
1/12/2005	89	109	2	Y	
4/13/2005	89	109	1	Y	
6/1/2005	89	109	2	Y	
9/7/2005	89	109	2	Y	
12/23/2005	89	109	0.7	Y	12/23/2005 0.7
3/15/2006	89	109	0.9	Y	3/15/2006 0.9
9/26/2006	89	109	0.6	Y	9/26/2006 0.6
2/8/2007	89	109	0.69	Y	2/8/2007 0.69
9/25/2007	89	109	5	N	9/25/2007 2.5
3/12/2008	89	109	5	N	3/12/2008 2.5
8/14/2008	89	109	5	N	8/14/2008 2.5
2/24/2009	89	109	5	N	2/24/2009 2.5
8/17/2009	89	109	5	N	8/17/2009 2.5
1/29/2010	89	109	5	N	1/29/2010 2.5
7/16/2010	89	109	5	N	7/16/2010 2.5
5/5/2011	89	109	5	N	5/5/2011 2.5
12/9/2011	89	109	5	N	12/9/2011 2.5
2/16/2012	89	109	5	N	2/16/2012 2.5
5/29/2013	89	109	0.31	Y	5/29/2013 0.31
5/15/2014	89	109	0.58	Y	5/15/2014 0.58
6/1/2015	89	109	0.39	Y	6/1/2015 0.39
4/28/2016	89	109	0.38	Y	4/28/2016 0.38

Well # GM-79I
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?		TCE MK Dataset
2/14/2001	170	180	6	Y		
5/7/2001	170	180	3	Y		
10/11/2001	170	180	2	Y		
1/9/2002	170	180	1	Y		
4/9/2002	170	180	1	Y		
7/12/2002	170	180	1	Y		
10/4/2002	170	180	1	Y		
1/14/2003	170	180	3	Y		
4/7/2003	170	180	1	Y		
8/1/2003	170	180	5	N		
10/3/2003	170	180	5	N		
12/30/2003	170	180	0.4	Y		
4/6/2004	170	180	5	N		
7/8/2004	170	180	2	Y		
10/8/2004	170	180	5	N		
12/28/2004	170	180	5	N		
3/23/2005	170	180	5	N		
6/7/2005	170	180	5	N		
9/1/2005	170	180	0.5	Y		
1/6/2006	170	180	5	N		
3/7/2006	170	180	5	N		
7/6/2006	170	180	5	N		
9/12/2006	170	180	5	N		
11/21/2006	170	180	5	N		
2/12/2007	170	180	5	N		
6/5/2007	170	180	5	N		
9/6/2007	170	180	5	N		
12/18/2007	170	180	5	N		
3/21/2008	170	180	5	N		
6/18/2008	170	180	5	N		
8/22/2008	170	180	5	N		
12/15/2008	170	180	5	N		
3/20/2009	170	180	5	N		
5/14/2009	170	180	5	N		
8/17/2009	170	180	5	N		
11/5/2009	170	180	5	N	11/5/2009	0.5
1/22/2010	170	180	5	N	1/22/2010	0.5
4/13/2010	170	180	5	N	4/13/2010	0.5
7/16/2010	170	180	5	N	7/16/2010	0.5
12/13/2010	170	180	5	N	12/13/2010	0.5
5/3/2011	170	180	28	Y	5/3/2011	28
7/26/2011	170	180	5	N	7/26/2011	0.5
12/26/2011	170	180	5	N	12/26/2011	0.5
2/14/2012	170	180	30	Y	2/14/2012	30
5/12/2012	170	180	5	N	5/12/2012	0.5
9/5/2012	170	180	5	N	9/5/2012	0.5
12/31/2012	170	180	5	N	12/31/2012	0.5
5/28/2013	170	180	0.23	Y	5/28/2013	0.23
12/17/2013	170	180	0.33	Y	12/17/2013	0.33
5/14/2014	170	180	0.31	Y	5/14/2014	0.31
10/24/2014	170	180	1	N	10/24/2014	0.5
4/22/2015	170	180	1	N	4/22/2015	0.5
4/13/2016	170	180	1	N	4/13/2016	0.5

Well # HN-24I
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
4/22/1999	148	158	190	Y		
12/2/1999	148	158	230	Y		
3/22/2000	148	158	270	Y		
6/28/2000	148	158	180	Y		
9/27/2000	148	158	180	Y		
2/1/2001	148	158	200	Y		
5/31/2001	148	158	180	Y		
10/4/2001	148	158	160	Y		
1/3/2002	148	158	160	Y		
4/11/2002	148	158	210	Y		
7/9/2002	148	158	160	Y		
10/15/2002	148	158	290	Y		
12/20/2002	148	158	190	Y		
3/20/2003	148	158	170	Y		
7/21/2003	148	158	110	Y		
10/14/2003	148	158	100	Y		
1/7/2004	148	158	62	Y		
3/18/2004	148	158	62	Y		
10/6/2004	148	158	36	Y	10/6/2004	36
4/12/2005	148	158	5	N	4/12/2005	2.5
9/20/2005	148	158	22	Y	9/20/2005	22
3/14/2006	148	158	37	Y	3/14/2006	37
9/29/2006	148	158	15	Y	9/29/2006	15
2/12/2007	148	158	11	Y	2/12/2007	11
3/13/2008	148	158	15	Y	3/13/2008	15
9/5/2008	148	158	19	Y	9/5/2008	19
2/27/2009	148	158	21	Y	2/27/2009	21
8/25/2009	148	158	22	Y	8/25/2009	22
8/6/2010	148	158	32	Y	8/6/2010	32
5/17/2011	148	158	35	Y	5/17/2011	35
12/28/2011	148	158	28	Y	12/28/2011	28
2/17/2012	148	158	27	Y	2/17/2012	27
6/10/2013	148	158	16	Y	6/10/2013	16
5/19/2014	148	158	18	Y	5/19/2014	18
6/2/2015	148	158	18.9	Y	6/2/2015	18.9
4/28/2016	148	158	15	Y	4/28/2016	15

Well # HN-29I
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
6/28/2000	120	130	2	Y		
9/27/2000	120	130	2	Y	9/27/2000	2
2/1/2001	120	130	2	Y	2/1/2001	2
5/31/2001	120	130	10	N	5/31/2001	2.5
10/4/2001	120	130	1	Y	10/4/2001	1
1/3/2002	120	130	2	Y	1/3/2002	2
4/11/2002	120	130	1	Y	4/11/2002	1
7/9/2002	120	130	1	Y	7/9/2002	1
10/15/2002	120	130	5	N	10/15/2002	2.5
12/20/2002	120	130	5	N	12/20/2002	2.5
3/20/2003	120	130	0.7	Y	3/20/2003	0.7
7/21/2003	120	130	5	N	7/21/2003	2.5
10/14/2003	120	130	1	Y	10/14/2003	1
1/7/2004	120	130	2	Y	1/7/2004	2
3/18/2004	120	130	1	Y	3/18/2004	1
10/6/2004	120	130	0.6	Y	10/6/2004	0.6
4/12/2005	120	130	5	N	4/12/2005	2.5
9/20/2005	120	130	1	Y	9/20/2005	1
3/14/2006	120	130	0.9	Y	3/14/2006	0.9

Well # HN-40I
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
2/13/2001	108	118	2	Y		
5/4/2001	108	118	4	Y		
10/5/2001	108	118	4	Y		
1/7/2002	108	118	5	Y		
3/25/2002	108	118	5	Y		
6/13/2002	108	118	6	Y		
10/14/2002	108	118	7	Y		
12/18/2002	108	118	8	Y		
3/18/2003	108	118	11	Y		
7/14/2003	108	118	10	Y		
10/13/2003	108	118	35	Y		
12/22/2003	108	118	35	Y		
3/16/2004	108	118	34	Y		
9/28/2004	108	118	20	Y		
3/14/2005	108	118	4	Y		
9/21/2005	108	118	4	Y		
3/17/2006	108	118	8	Y		
4/13/2006	108	118	3	Y	4/13/2006	3
9/27/2006	108	118	0.5	Y	9/27/2006	0.5
2/7/2007	108	118	5	N	2/7/2007	2.5
9/24/2007	108	118	5	N	9/24/2007	2.5
8/12/2008	108	118	5	N	8/12/2008	2.5
2/23/2009	108	118	5	N	2/23/2009	2.5
7/14/2009	108	118	5	N	7/14/2009	2.5
8/24/2009	108	118	5	N	8/24/2009	2.5
10/22/2009	108	118	5	N	10/22/2009	2.5
1/28/2010	108	118	5	N	1/28/2010	2.5
7/15/2010	108	118	1.2	Y	7/15/2010	1.2
5/3/2011	108	118	2.3	Y	5/3/2011	2.3
12/19/2011	108	118	8.7	Y	12/19/2011	8.7
2/7/2012	108	118	11	Y	2/7/2012	11
5/28/2013	108	118	22	Y	5/28/2013	22
5/12/2014	108	118	22	Y	5/12/2014	22
4/20/2015	108	118	5	N	4/20/2015	2.5
4/13/2016	108	118	5	N	4/13/2016	2.5

Well # HN-42I
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
2/9/2001	100	110	1	Y		
5/4/2001	100	110	0.9	Y		
10/5/2001	100	110	0.9	Y		
1/7/2002	100	110	1	Y		
3/26/2002	100	110	5	N		
6/13/2002	100	110	5	N		
10/14/2002	100	110	5	N		
12/18/2002	100	110	0.4	Y		
3/18/2003	100	110	0.5	Y		
7/14/2003	100	110	5	N		
10/13/2003	100	110	5	N		
12/22/2003	100	110	0.6	Y		
3/16/2004	100	110	5	N		
9/28/2004	100	110	5	N		
3/14/2005	100	110	5	N		
9/21/2005	100	110	0.4	Y		
3/17/2006	100	110	5	N		
4/13/2006	100	110	5	N		
9/27/2006	100	110	2	Y		
2/7/2007	100	110	10	Y	2/7/2007	10
9/24/2007	100	110	12	Y	9/24/2007	12
3/12/2008	100	110	15	Y	3/12/2008	15
3/13/2008	100	110	5	N	3/13/2008	2.5
8/12/2008	100	110	17	Y	8/12/2008	17
2/23/2009	100	110	18	Y	2/23/2009	18
7/8/2009	100	110	20	Y	7/8/2009	20
8/20/2009	100	110	19	Y	8/20/2009	19
10/21/2009	100	110	17	Y	10/21/2009	17
1/28/2010	100	110	12	Y	1/28/2010	12
7/15/2010	100	110	7.3	Y	7/15/2010	7.3
5/2/2011	100	110	8.1	Y	5/2/2011	8.1
12/17/2011	100	110	4.3	Y	12/17/2011	4.3
2/6/2012	100	110	3.9	Y	2/6/2012	3.9
5/28/2013	100	110	3	Y	5/28/2013	3
5/12/2014	100	110	5	N	5/12/2014	2.5
4/27/2015	100	110	0.56	Y	4/27/2015	0.56
4/26/2016	100	110	0.71	Y	4/26/2016	0.71

Well # BPOW 1-1
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
4/23/2004	196	241	3.8	Y		
4/30/2004	196	241	4	Y		
5/6/2004	196	241	3.2	Y		
6/29/2004	196	241	3.4	Y		
11/11/2004	196	241	3.3	Y		
1/4/2005	196	241	3.2	Y		
4/5/2005	196	241	2.5	Y		
6/14/2005	196	241	0.78	Y		
9/13/2005	196	241	2.5	Y		
1/17/2006	196	241	2.5	Y		
3/28/2006	196	241	2	Y		
7/10/2006	196	241	2.3	Y		
10/6/2006	196	241	1.6	Y		
12/1/2006	196	241	2	Y		
3/7/2007	196	241	1.7	Y		
6/18/2007	196	241	1.6	Y		
9/21/2007	196	241	1.3	Y		
12/10/2007	196	241	1.3	Y		
3/31/2008	196	241	1.3	Y		
6/27/2008	196	241	1.4	Y		
8/5/2008	196	241	1.2	Y		
12/18/2008	196	241	1.3	Y		
3/3/2009	196	241	1.4	Y		
5/19/2009	196	241	1.4	Y		
8/6/2009	196	241	1.2	Y		
11/11/2009	196	241	1.3	Y		
1/21/2010	196	241	1.4	Y		
4/6/2010	196	241	1.1	Y		
7/20/2010	196	241	0.86	Y		
12/16/2010	196	241	0.89	Y		
2/9/2011	196	241	1.1	Y		
5/23/2011	196	241	1.2	Y		
8/5/2011	196	241	0.94	Y		
11/30/2011	196	241	1.1	Y	11/30/2011	1.1
2/21/2012	196	241	1.1	Y	2/21/2012	1.1
5/1/2012	196	241	1.1	Y	5/1/2012	1.1
8/20/2012	196	241	0.95	Y	8/20/2012	0.95
11/29/2012	196	241	0.9	Y	11/29/2012	0.9
2/6/2013	196	241	0.88	Y	2/6/2013	0.88
5/14/2013	196	241	0.82	Y	5/14/2013	0.82
8/14/2013	196	241	0.86	Y	8/14/2013	0.86
11/25/2013	196	241	0.9	Y	11/25/2013	0.9
2/11/2014	196	241	0.9	Y	2/11/2014	0.9
4/17/2014	196	241	0.86	Y	4/17/2014	0.86
8/4/2014	196	241	0.84	Y	8/4/2014	0.84
12/9/2014	196	241	1.00	Y	12/9/2014	1.00
2/4/2015	196	241	1.1	Y	2/4/2015	1.1
5/27/2015	196	241	0.97	Y	5/27/2015	0.97
8/11/2015	196	241	1.10	Y	8/11/2015	1.10
11/2/2015	196	241	1.1	Y	11/2/2015	1.1
6/8/2016	196	241	1.1	Y	6/8/2016	1.1

Well # BPOW 1-2
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
4/26/2004	310	335	0.5	N		
6/29/2004	310	335	0.5	N		
11/11/2004	310	335	0.5	N		
1/4/2005	310	335	0.5	N		
4/5/2005	310	335	0.5	N		
6/14/2005	310	335	0.5	N		
9/13/2005	310	335	0.5	N		
1/16/2006	310	335	0.5	N		
3/28/2006	310	335	0.5	N		
7/10/2006	310	335	0.5	N		
10/6/2006	310	335	0.5	N		
12/1/2006	310	335	0.5	N		
3/6/2007	310	335	0.5	N		
6/19/2007	310	335	0.5	N		
9/21/2007	310	335	0.5	N		
12/10/2007	310	335	0.5	N		
3/31/2008	310	335	0.5	N		
6/27/2008	310	335	0.5	N		
8/5/2008	310	335	0.5	N		
12/18/2008	310	335	0.5	N		
3/3/2009	310	335	0.5	N		
5/19/2009	310	335	0.5	N		
8/6/2009	310	335	0.5	N		
11/11/2009	310	335	0.5	N		
1/21/2010	310	335	0.5	N		
4/6/2010	310	335	0.5	N		
7/20/2010	310	335	0.5	N		
12/16/2010	310	335	0.5	N		
2/8/2011	310	335	0.5	N		
5/23/2011	310	335	0.25	Y		
8/5/2011	310	335	0.38	Y		
11/30/2011	310	335	0.41	Y		
2/20/2012	310	335	0.33	Y	2/20/2012	0.33
5/1/2012	310	335	0.33	Y	5/1/2012	0.33
8/20/2012	310	335	0.3	Y	8/20/2012	0.3
12/5/2012	310	335	0.4	Y	12/5/2012	0.4
12/11/2012	310	335	0.25	Y	12/11/2012	0.25
2/6/2013	310	335	0.63	Y	2/6/2013	0.63
5/14/2013	310	335	0.33	Y	5/14/2013	0.33
8/15/2013	310	335	0.5	N	8/15/2013	0.25
11/22/2013	310	335	0.5	N	11/22/2013	0.25
2/11/2014	310	335	0.55	Y	2/11/2014	0.55
4/17/2014	310	335	0.5	N	4/17/2014	0.25
8/4/2014	310	335	0.5	N	8/4/2014	0.25
12/8/2014	310	335	0.37	Y	12/8/2014	0.37
2/3/2015	310	335	0.62	Y	2/3/2015	0.62
5/27/2015	310	335	0.45	Y	5/27/2015	0.45
8/11/2015	310	335	0.3	Y	8/11/2015	0.3
11/2/2015	310	335	0.23	Y	11/2/2015	0.23
6/7/2016	310	335	0.85	Y	6/7/2016	0.85

Not Tested, Non-Detect Values:

BPOW 1-3
BPOW 1-4
BPOW 1-5
BPOW 1-6

Well # GM-15D
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
9/28/2000	332	342	9	Y		
1/30/2001	332	342	13	Y		
4/30/2001	332	342	12	Y		
10/8/2001	332	342	10	Y		
12/19/2001	332	342	11	Y		
3/28/2002	332	342	10	Y		
7/10/2002	332	342	8	Y		
10/8/2002	332	342	9	Y		
1/6/2003	332	342	8	Y		
3/21/2003	332	342	11	Y		
7/29/2003	332	342	6	Y		
10/2/2003	332	342	8	Y		
12/29/2003	332	342	10	Y		
3/17/2004	332	342	8	Y		
7/13/2004	332	342	6	Y		
10/4/2004	332	342	5	Y		
1/7/2005	332	342	4	Y		
3/16/2005	332	342	3	Y		
5/31/2005	332	342	3	Y		
8/19/2005	332	342	2	Y		
12/22/2005	332	342	1	Y		
3/13/2006	332	342	1	Y		
9/20/2006	332	342	1	Y		
2/20/2007	332	342	5	N		
9/12/2007	332	342	5	N		
3/11/2008	332	342	5	N	3/11/2008	0.5
8/13/2008	332	342	5	N	8/13/2008	0.5
2/27/2009	332	342	1.5	Y	2/27/2009	1.5
7/7/2009	332	342	1.3	Y	7/7/2009	1.3
8/14/2009	332	342	1.2	Y	8/14/2009	1.2
10/23/2009	332	342	1.1	Y	10/23/2009	1.1
1/21/2010	332	342	0.93	Y	1/21/2010	0.93
7/13/2010	332	342	0.76	Y	7/13/2010	0.76
5/6/2011	332	342	0.6	Y	5/6/2011	0.6
12/10/2011	332	342	0.31	Y	12/10/2011	0.31
2/8/2012	332	342	0.51	Y	2/8/2012	0.51
9/12/2012	332	342	0.55	Y	9/12/2012	0.55
5/24/2013	332	342	0.36	Y	5/24/2013	0.36
12/12/2013	332	342	0.39	Y	12/12/2013	0.39
6/4/2014	332	342	0.48	Y	6/4/2014	0.48
10/20/2014	332	342	1	N	10/20/2014	0.5
5/7/2015	332	342	0.34	Y	5/7/2015	0.34
6/30/2016	332	342	1	N	6/30/2016	0.5

Well # GM-17D
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
9/29/2000	278	298	10	N		
1/31/2001	278	298	10	N		
5/1/2001	278	298	10	N		
10/2/2001	278	298	10	N		
12/27/2001	278	298	5	N		
4/2/2002	278	298	5	N		
6/18/2002	278	298	5	N		
10/7/2002	278	298	5	N		
12/27/2002	278	298	5	N		
3/28/2003	278	298	5	N		
7/28/2003	278	298	5	N		
9/30/2003	278	298	5	N		
1/14/2004	278	298	5	N		
3/31/2004	278	298	5	N		
7/9/2004	278	298	5	N		
10/29/2004	278	298	5	N		
1/10/2005	278	298	5	N		
3/25/2005	278	298	5	N		
6/7/2005	278	298	5	N		
9/1/2005	278	298	1	Y		
12/20/2005	278	298	5	N		
3/8/2006	278	298	5	N		
9/13/2006	278	298	5	N		
2/9/2007	278	298	0.36	Y	2/9/2007	0.36
9/13/2007	278	298	5	N	9/13/2007	2.5
3/7/2008	278	298	5	N	3/7/2008	2.5
8/11/2008	278	298	5	N	8/11/2008	2.5
2/17/2009	278	298	0.32	Y	2/17/2009	0.32
8/12/2009	278	298	0.47	Y	8/12/2009	0.47
2/17/2010	278	298	0.49	Y	2/17/2010	0.49
7/29/2010	278	298	0.44	Y	7/29/2010	0.44
5/11/2011	278	298	0.54	Y	5/11/2011	0.54
12/21/2011	278	298	0.36	Y	12/21/2011	0.36
2/9/2012	278	298	0.33	Y	2/9/2012	0.33
9/10/2012	278	298	5	N	9/10/2012	2.5
6/11/2013	278	298	0.34	Y	6/11/2013	0.34
12/19/2013	278	298	0.28	Y	12/19/2013	0.28
5/5/2014	278	298	0.66	Y	5/5/2014	0.66
10/23/2014	278	298	0.3	Y	10/23/2014	0.3
4/22/2015	278	298	0.33	Y	4/22/2015	0.33
5/2/2016	278	298	0.61	Y	5/2/2016	0.61

Well # GM-18D
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
2/14/2001	290	300	0.7	Y		
6/4/2001	290	300	2	Y		
9/28/2001	290	300	2	Y		
1/10/2002	290	300	1	Y		
4/2/2002	290	300	0.9	Y		
6/21/2002	290	300	3	Y		
10/3/2002	290	300	6	Y		
12/27/2002	290	300	8	Y		
4/8/2003	290	300	11	Y		
7/25/2003	290	300	9	Y		
10/1/2003	290	300	6	Y		
1/14/2004	290	300	5	Y		
3/23/2004	290	300	3	Y		
7/9/2004	290	300	0.8	Y		
10/29/2004	290	300	5	N		
12/29/2004	290	300	6	Y		
3/18/2005	290	300	7	Y		
6/7/2005	290	300	9	Y		
9/26/2005	290	300	9	Y		
1/6/2006	290	300	9	Y		
3/8/2006	290	300	11	Y		
4/11/2006	290	300	12	Y		
9/15/2006	290	300	11	Y		
2/13/2007	290	300	7	Y	2/13/2007	7
9/14/2007	290	300	6.4	Y	9/14/2007	6.4
3/21/2008	290	300	5	N	3/21/2008	2.5
8/26/2008	290	300	5	N	8/26/2008	2.5
4/1/2009	290	300	1.5	Y	4/1/2009	1.5
8/13/2009	290	300	1	Y	8/13/2009	1
2/17/2010	290	300	3.2	Y	2/17/2010	3.2
7/30/2010	290	300	2	Y	7/30/2010	2
5/11/2011	290	300	1.7	Y	5/11/2011	1.7
12/22/2011	290	300	0.83	Y	12/22/2011	0.83
2/17/2012	290	300	1.1	Y	2/17/2012	1.1
9/10/2012	290	300	1.4	Y	9/10/2012	1.4
6/10/2013	290	300	0.92	Y	6/10/2013	0.92
12/31/2013	290	300	1.3	Y	12/31/2013	1.3
5/1/2014	290	300	1.6	Y	5/1/2014	1.6
10/15/2014	290	300	0.75	Y	10/15/2014	0.75
4/21/2015	290	300	0.87	Y	4/21/2015	0.87
6/14/2016	290	300	0.39	Y	6/14/2016	0.39

Well # GM-21D
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
1/10/2002	278	288	0.8	Y		
3/29/2002	278	288	5	N		
6/17/2002	278	288	2	Y		
10/8/2002	278	288	3	Y		
1/8/2003	278	288	2	Y		
3/24/2003	278	288	3	Y		
7/17/2003	278	288	3	Y		
10/2/2003	278	288	2	Y		
12/30/2003	278	288	2	Y		
3/24/2004	278	288	2	Y		
7/8/2004	278	288	1	Y		
10/5/2004	278	288	1	Y		
12/30/2004	278	288	0.8	Y		
3/17/2005	278	288	0.6	Y		
6/6/2005	278	288	2	Y		
8/29/2005	278	288	2	Y		
1/3/2006	278	288	2	Y		
3/7/2006	278	288	2	Y		
7/5/2006	278	288	1	Y		
9/18/2006	278	288	1	Y		
11/20/2006	278	288	2	Y		
2/13/2007	278	288	2.2	Y		
6/1/2007	278	288	5	N		
9/11/2007	278	288	5	N		
12/18/2007	278	288	5	N		
3/3/2008	278	288	5	N		
6/18/2008	278	288	5	N		
8/28/2008	278	288	5	N		
12/15/2008	278	288	5	N		
3/20/2009	278	288	0.69	Y	3/20/2009	0.69
5/17/2009	278	288	0.74	Y	5/17/2009	0.74
8/12/2009	278	288	0.53	Y	8/12/2009	0.53
11/13/2009	278	288	0.67	Y	11/13/2009	0.67
2/8/2010	278	288	0.89	Y	2/8/2010	0.89
4/19/2010	278	288	0.87	Y	4/19/2010	0.87
8/4/2010	278	288	1.2	Y	8/4/2010	1.2
12/13/2010	278	288	1.7	Y	12/13/2010	1.7
5/12/2011	278	288	0.55	Y	5/12/2011	0.55
7/27/2011	278	288	0.5	Y	7/27/2011	0.5
12/12/2011	278	288	0.43	Y	12/12/2011	0.43
2/14/2012	278	288	0.36	Y	2/14/2012	0.36
5/9/2012	278	288	0.43	Y	5/9/2012	0.43
12/3/2012	278	288	2	Y	12/3/2012	2
5/29/2013	278	288	1.8	Y	5/29/2013	1.8
6/3/2014	278	288	0.97	Y	6/3/2014	0.97
4/24/2015	278	288	2.6	Y	4/24/2015	2.6
5/5/2016	278	288	1.7	Y	5/5/2016	1.7

Well # GM-39DA
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
11/26/2002	262	282	23	Y		
1/7/2003	262	282	21	Y		
4/9/2003	262	282	18	Y		
7/22/2003	262	282	19	Y		
10/15/2003	262	282	21	Y		
1/20/2004	262	282	29	Y		
3/23/2004	262	282	42	Y		
7/7/2004	262	282	25	Y		
10/7/2004	262	282	13	Y		
12/29/2004	262	282	9	Y		
3/23/2005	262	282	9	Y		
6/3/2005	262	282	7	Y		
8/25/2005	262	282	9	Y		
1/3/2006	262	282	10	Y		
3/24/2006	262	282	10	Y		
9/18/2006	262	282	17	Y		
2/13/2007	262	282	17	Y	2/13/2007	17
9/6/2007	262	282	14	Y	9/6/2007	14
3/18/2008	262	282	19	Y	3/18/2008	19
8/20/2008	262	282	13	Y	8/20/2008	13
3/16/2009	262	282	5.1	Y	3/16/2009	5.1
8/10/2009	262	282	6.5	Y	8/10/2009	6.5
1/29/2010	262	282	10	Y	1/29/2010	10
7/30/2010	262	282	5.5	Y	7/30/2010	5.5
5/9/2011	262	282	1.2	Y	5/9/2011	1.2
12/15/2011	262	282	0.69	Y	12/15/2011	0.69
3/6/2012	262	282	0.74	Y	3/6/2012	0.74
8/28/2012	262	282	1.1	Y	8/28/2012	1.1
6/14/2013	262	282	2.8	Y	6/14/2013	2.8
12/11/2013	262	282	3.7	Y	12/11/2013	3.7
5/9/2014	262	282	1.2	Y	5/9/2014	1.2
10/15/2014	262	282	0.66	Y	10/15/2014	0.66
4/23/2015	262	282	1	Y	4/23/2015	1
5/3/2016	262	282	6.1	Y	5/3/2016	6.1

Well # GM-39DB
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
11/25/2002	410	420	110	Y		
1/7/2003	410	420	110	Y		
4/9/2003	410	420	61	Y		
7/22/2003	410	420	41	Y		
10/15/2003	410	420	44	Y		
1/20/2004	410	420	85	Y		
3/23/2004	410	420	75	Y		
7/7/2004	410	420	49	Y		
10/7/2004	410	420	35	Y		
12/29/2004	410	420	46	Y		
3/25/2005	410	420	28	Y		
6/7/2005	410	420	23	Y		
8/25/2005	410	420	21	Y		
1/6/2006	410	420	50	Y		
3/24/2006	410	420	42	Y		
9/18/2006	410	420	63	Y		
2/28/2007	410	420	43	Y	2/28/2007	43
9/14/2007	410	420	27	Y	9/14/2007	27
3/18/2008	410	420	46	Y	3/18/2008	46
8/20/2008	410	420	62	Y	8/20/2008	62
3/16/2009	410	420	68	Y	3/16/2009	68
8/10/2009	410	420	52	Y	8/10/2009	52
1/29/2010	410	420	34	Y	1/29/2010	34
7/30/2010	410	420	66	Y	7/30/2010	66
5/9/2011	410	420	94	Y	5/9/2011	94
12/15/2011	410	420	62	Y	12/15/2011	62
3/5/2012	410	420	64	Y	3/5/2012	64
8/28/2012	410	420	56	Y	8/28/2012	56
6/14/2013	410	420	80	Y	6/14/2013	80
12/11/2013	410	420	70	Y	12/11/2013	70
5/9/2014	410	420	52	Y	5/9/2014	52
10/15/2014	410	420	52.7	Y	10/15/2014	52.7
4/23/2015	410	420	43.9	Y	4/23/2015	43.9
5/3/2016	410	420	21	Y	5/3/2016	21

Well # GM-73D
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
10/18/2002	401	411	780	Y		
11/25/2002	401	411	510	Y		
1/15/2003	401	411	680	Y		
3/25/2003	401	411	520	Y		
7/23/2003	401	411	430	Y		
10/15/2003	401	411	310	Y		
1/15/2004	401	411	260	Y		
3/22/2004	401	411	250	Y		
7/7/2004	401	411	110	Y		
11/8/2004	401	411	86	Y		
1/13/2005	401	411	84	Y		
3/22/2005	401	411	82	Y		
6/2/2005	401	411	74	Y		
8/18/2005	401	411	38	Y		
12/21/2005	401	411	23	Y		
3/20/2006	401	411	26	Y		
9/14/2006	401	411	14	Y		
2/28/2007	401	411	13	Y	2/28/2007	13
9/7/2007	401	411	10	Y	9/7/2007	10
3/18/2008	401	411	6.4	Y	3/18/2008	6.4
8/21/2008	401	411	7.6	Y	8/21/2008	7.6
2/17/2009	401	411	16	Y	2/17/2009	16
8/10/2009	401	411	4.6	Y	8/10/2009	4.6
1/28/2010	401	411	3.3	Y	1/28/2010	3.3
8/3/2010	401	411	5.6	Y	8/3/2010	5.6
5/4/2011	401	411	58	Y	5/4/2011	58
12/17/2011	401	411	59	Y	12/17/2011	59
2/10/2012	401	411	68	Y	2/10/2012	68
8/27/2012	401	411	8.9	Y	8/27/2012	8.9
5/23/2013	401	411	23	Y	5/23/2013	23
12/11/2013	401	411	19	Y	12/11/2013	19
5/9/2014	401	411	11	Y	5/9/2014	11
10/17/2014	401	411	14.2	Y	10/17/2014	14.2
4/17/2015	401	411	11.1	Y	4/17/2015	11.1
6/29/2016	401	411	7.9	Y	6/29/2016	7.9

Well # GM-74D
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?		TCE MK Dataset
10/6/2000	295	305	64	Y		
2/5/2001	295	305	81	Y		
6/5/2001	295	305	63	Y		
10/9/2001	295	305	35	Y		
1/4/2002	295	305	32	Y		
4/4/2002	295	305	17	Y		
6/19/2002	295	305	15	Y		
10/9/2002	295	305	10	Y		
1/13/2003	295	305	9	Y		
3/25/2003	295	305	7	Y		
7/24/2003	295	305	4	Y		
9/29/2003	295	305	5	Y		
1/13/2004	295	305	4	Y		
3/22/2004	295	305	4	Y		
7/6/2004	295	305	4	Y		
11/1/2004	295	305	3	Y		
1/13/2005	295	305	3	Y		
3/22/2005	295	305	3	Y		
6/2/2005	295	305	4	Y		
8/18/2005	295	305	3	Y		
12/21/2005	295	305	2	Y		
3/20/2006	295	305	3	Y		
9/14/2006	295	305	3	Y		
2/27/2007	295	305	5	N	2/27/2007	2.5
9/7/2007	295	305	5	N	9/7/2007	2.5
3/17/2008	295	305	5	N	3/17/2008	2.5
8/18/2008	295	305	5	N	8/18/2008	2.5
2/17/2009	295	305	2.5	Y	2/17/2009	2.5
8/10/2009	295	305	3.3	Y	8/10/2009	3.3
1/28/2010	295	305	2.6	Y	1/28/2010	2.6
7/14/2010	295	305	2.3	Y	7/14/2010	2.3
5/4/2011	295	305	1.8	Y	5/4/2011	1.8
12/16/2011	295	305	1.7	Y	12/16/2011	1.7
2/10/2012	295	305	1.7	Y	2/10/2012	1.7
8/28/2012	295	305	1.4	Y	8/28/2012	1.4
5/23/2013	295	305	1.6	Y	5/23/2013	1.6
12/9/2013	295	305	1.5	Y	12/9/2013	1.5
5/8/2014	295	305	1	Y	5/8/2014	1
10/17/2014	295	305	0.99	Y	10/17/2014	0.99
4/23/2015	295	305	1	Y	4/23/2015	1
4/13/2016	295	305	1.2	Y	4/13/2016	1.2

Well # GM-79D
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset
2/14/2001	280	290	48	Y	
5/3/2001	280	290	49	Y	
10/11/2001	280	290	63	Y	
1/9/2002	280	290	80	Y	
4/9/2002	280	290	64	Y	
7/11/2002	280	290	91	Y	
10/4/2002	280	290	96	Y	
1/14/2003	280	290	110	Y	
4/7/2003	280	290	110	Y	
8/1/2003	280	290	97	Y	
10/3/2003	280	290	92	Y	
12/30/2003	280	290	75	Y	
4/6/2004	280	290	76	Y	
7/8/2004	280	290	65	Y	
10/8/2004	280	290	31	Y	
12/28/2004	280	290	62	Y	
3/23/2005	280	290	68	Y	
6/7/2005	280	290	79	Y	
9/1/2005	280	290	54	Y	
1/6/2006	280	290	58	Y	
3/7/2006	280	290	57	Y	
7/6/2006	280	290	44	Y	
9/12/2006	280	290	55	Y	
11/21/2006	280	290	47	Y	
2/12/2007	280	290	38	Y	
6/5/2007	280	290	38	Y	
9/6/2007	280	290	33	Y	
12/18/2007	280	290	34	Y	
3/21/2008	280	290	39	Y	
6/18/2008	280	290	47	Y	
8/22/2008	280	290	46	Y	
12/15/2008	280	290	48	Y	
3/20/2009	280	290	48	Y	
5/14/2009	280	290	37	Y	
8/17/2009	280	290	38	Y	
11/5/2009	280	290	33	Y	11/5/2009 33
1/22/2010	280	290	37	Y	1/22/2010 37
4/13/2010	280	290	34	Y	4/13/2010 34
7/16/2010	280	290	35	Y	7/16/2010 35
12/13/2010	280	290	31	Y	12/13/2010 31
5/3/2011	280	290	5	N	5/3/2011 2.5
7/26/2011	280	290	26	Y	7/26/2011 26
12/26/2011	280	290	26	Y	12/26/2011 26
2/14/2012	280	290	5	N	2/14/2012 2.5
5/18/2012	280	290	26	Y	5/18/2012 26
9/5/2012	280	290	18	Y	9/5/2012 18
12/31/2012	280	290	27	Y	12/31/2012 27
5/28/2013	280	290	19	Y	5/28/2013 19
12/17/2013	280	290	13	Y	12/17/2013 13
5/14/2014	280	290	18	Y	5/14/2014 18
10/24/2014	280	290	15.5	Y	10/24/2014 15.5
6/13/2015	280	290	18	Y	6/13/2015 18
4/13/2016	280	290	25.9	Y	4/13/2016 25.9

Well # HN-29D
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?		TCE MK Dataset	
12/2/1999	210	220	1	Y			
3/22/2000	210	220	10	N			
7/6/2000	210	220	0.9	Y			
9/27/2000	210	220	1	Y	9/27/2000	1	
2/1/2001	210	220	10	N	2/1/2001	2.5	
5/31/2001	210	220	10	N	5/31/2001	2.5	
10/4/2001	210	220	2	Y	10/4/2001	2	
1/3/2002	210	220	1	Y	1/3/2002	1	
4/11/2002	210	220	1	Y	4/11/2002	1	
7/9/2002	210	220	1	Y	7/9/2002	1	
10/15/2002	210	220	1	Y	10/15/2002	1	
12/20/2002	210	220	2	Y	12/20/2002	2	
3/20/2003	210	220	1	Y	3/20/2003	1	
7/21/2003	210	220	1	Y	7/21/2003	1	
10/14/2003	210	220	0.9	Y	10/14/2003	0.9	
1/7/2004	210	220	1	Y	1/7/2004	1	
3/18/2004	210	220	0.6	Y	3/18/2004	0.6	
10/6/2004	210	220	0.8	Y	10/6/2004	0.8	
4/14/2005	210	220	0.7	Y	4/14/2005	0.7	
9/20/2005	210	220	0.6	Y	9/20/2005	0.6	
3/14/2006	210	220	5	N	3/14/2006	2.5	

Not Tested, Non-Detect Values:

BPOW 2-1
BPOW 2-2
BPOW 2-3
BPOW 3-1
BPOW 3-2
BPOW 3-3

Well # BPOW 3-4
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?		TCE MK Dataset	
12/7/2011	640	690	46	Y		12/7/2011	46
3/8/2012	640	690	45	Y		3/8/2012	45
5/16/2012	640	690	51	Y		5/16/2012	51
9/4/2012	640	690	58	Y		9/4/2012	58
12/28/2012	640	690	59	Y		12/28/2012	59
2/19/2013	640	690	57	Y		2/19/2013	57
5/21/2013	640	690	53	Y		5/21/2013	53
8/26/2013	640	690	64	Y		8/26/2013	64
12/6/2013	640	690	49	Y		12/6/2013	49
2/25/2014	640	690	46	Y		2/25/2014	46
4/22/2014	640	690	50	Y		4/22/2014	50
8/12/2014	640	690	54	Y		8/12/2014	54
11/26/2014	640	690	74.6	Y		11/26/2014	74.6
3/31/2015	640	690	64.2	Y		3/31/2015	64.2
6/9/2015	640	690	52.9	Y		6/9/2015	52.9
8/25/2015	640	690	60.9	Y		8/25/2015	60.9
12/11/2015	640	690	80.7	Y		12/11/2015	80.7
6/22/2016	640	690	63	Y		6/22/2016	63

Not Tested, Non-Detect Values:
BPOW 4-1
BPOW 4-2

Well # BPOW 4-1R
TCE Results and
Mann-Kendall Dataset

Date	Top screen	Bottom Screen	TCE Result	Detect?		TCE MK Dataset	
12/15/2014	652	692	0.84	Y		12/15/2014	0.84
3/30/2015	652	692	0.79	Y		3/30/2015	0.79
6/3/2015	652	692	0.58	Y		6/3/2015	0.58
8/26/2015	652	692	0.92	Y		8/26/2015	0.92
11/13/2015	652	692	1.0	Y		11/13/2015	1.0
5/31/2016	652	692	1.1	Y		5/31/2016	1.1

Well # BPOW 4-2R
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detec t?		TCE MK Dataset	
12/15/2014	725	765	0.73	Y		12/15/2014	0.73
3/27/2015	725	765	0.78	Y		3/27/2015	0.78
6/3/2015	725	765	0.82	Y		6/3/2015	0.82
8/24/2015	725	765	1.6	Y		8/24/2015	1.6
11/12/2015	725	765	1.5	Y		11/12/2015	1.5
6/1/2016	725	765	1.9	Y		6/1/2016	1.9

Well # GM-15D2
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
10/2/2000	536	556	9	Y		
1/30/2001	536	556	15	Y		
4/30/2001	536	556	13	Y		
10/8/2001	536	556	16	Y		
12/19/2001	536	556	16	Y		
3/28/2002	536	556	17	Y		
7/10/2002	536	556	12	Y		
10/2/2002	536	556	16	Y		
1/6/2003	536	556	13	Y		
3/21/2003	536	556	15	Y		
7/29/2003	536	556	12	Y		
10/2/2003	536	556	13	Y		
1/6/2004	536	556	13	Y		
3/17/2004	536	556	6	Y		
7/13/2004	536	556	12	Y		
10/4/2004	536	556	11	Y		
1/7/2005	536	556	11	Y		
3/16/2005	536	556	11	Y		
5/31/2005	536	556	13	Y		
8/19/2005	536	556	11	Y		
12/22/2005	536	556	12	Y		
3/13/2006	536	556	13	Y		
9/13/2006	536	556	13	Y		
2/20/2007	536	556	11	Y		
9/12/2007	536	556	10	Y		
3/11/2008	536	556	10	Y	3/11/2008	10
8/13/2008	536	556	10	Y	8/13/2008	10
2/27/2009	536	556	11	Y	2/27/2009	11
7/7/2009	536	556	10	Y	7/7/2009	10
8/14/2009	536	556	10	Y	8/14/2009	10
10/23/2009	536	556	11	Y	10/23/2009	11
1/21/2010	536	556	10	Y	1/21/2010	10
7/13/2010	536	556	10	Y	7/13/2010	10
5/6/2011	536	556	11	Y	5/6/2011	11
12/10/2011	536	556	9.6	Y	12/10/2011	9.6
2/8/2012	536	556	10	Y	2/8/2012	10
9/12/2012	536	556	10	Y	9/12/2012	10
5/24/2013	536	556	11	Y	5/24/2013	11
12/12/2013	536	556	10	Y	12/12/2013	10
6/4/2014	536	556	9.2	Y	6/4/2014	9.2
10/20/2014	536	556	9.5	Y	10/20/2014	9.5
5/7/2015	536	556	9.7	Y	5/7/2015	9.7
4/13/2016	536	556	8.8	Y	4/13/2016	8.8

Well # GM-73D2
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
10/4/2000	532	552	960	Y		
2/8/2001	532	552	630	Y		
6/5/2001	532	552	830	Y		
10/9/2001	532	552	1100	Y		
1/4/2002	532	552	940	Y		
4/4/2002	532	552	830	Y		
6/19/2002	532	552	840	Y		
11/22/2002	532	552	1200	Y		
1/13/2003	532	552	1100	Y		
3/25/2003	532	552	880	Y		
7/23/2003	532	552	1100	Y		
9/29/2003	532	552	830	Y		
1/13/2004	532	552	1100	Y		
3/22/2004	532	552	720	Y		
7/7/2004	532	552	610	Y		
11/8/2004	532	552	360	Y		
1/13/2005	532	552	340	Y		
3/22/2005	532	552	320	Y		
6/3/2005	532	552	260	Y		
8/26/2005	532	552	150	Y		
12/21/2005	532	552	140	Y		
3/24/2006	532	552	140	Y		
9/14/2006	532	552	96	Y		
2/28/2007	532	552	67	Y	2/28/2007	67
9/7/2007	532	552	72	Y	9/7/2007	72
3/17/2008	532	552	58	Y	3/17/2008	58
8/21/2008	532	552	44	Y	8/21/2008	44
2/17/2009	532	552	40	Y	2/17/2009	40
8/10/2009	532	552	69	Y	8/10/2009	69
1/28/2010	532	552	47	Y	1/28/2010	47
8/3/2010	532	552	53	Y	8/3/2010	53
5/4/2011	532	552	110	Y	5/4/2011	110
12/17/2011	532	552	94	Y	12/17/2011	94
2/10/2012	532	552	93	Y	2/10/2012	93
8/27/2012	532	552	60	Y	8/27/2012	60
5/23/2013	532	552	44	Y	5/23/2013	44
12/11/2013	532	552	29	Y	12/11/2013	29
5/8/2014	532	552	25	Y	5/8/2014	25
10/17/2014	532	552	40	Y	10/17/2014	40
4/17/2015	532	552	46.7	Y	4/17/2015	46.7
5/6/2016	532	552	33.2	Y	5/6/2016	33.2

Well # GM-74D2
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
10/5/2000	542	562	5	Y		
2/8/2001	542	562	4	Y		
6/5/2001	542	562	4	Y		
10/9/2001	542	562	3	Y		
1/4/2002	542	562	3	Y		
4/4/2002	542	562	2	Y		
6/19/2002	542	562	4	Y		
10/9/2002	542	562	8	Y		
1/13/2003	542	562	8	Y		
3/25/2003	542	562	8	Y		
7/24/2003	542	562	8	Y		
9/29/2003	542	562	10	Y		
1/13/2004	542	562	8	Y		
3/22/2004	542	562	8	Y		
7/6/2004	542	562	9	Y		
11/1/2004	542	562	9	Y		
1/13/2005	542	562	8	Y		
3/22/2005	542	562	8	Y		
6/2/2005	542	562	9	Y		
8/18/2005	542	562	9	Y		
12/21/2005	542	562	9	Y		
3/20/2006	542	562	12	Y		
9/15/2006	542	562	9	Y		
2/27/2007	542	562	7.4	Y	2/27/2007	7.4
9/7/2007	542	562	7	Y	9/7/2007	7
3/17/2008	542	562	7.3	Y	3/17/2008	7.3
8/18/2008	542	562	6.4	Y	8/18/2008	6.4
2/17/2009	542	562	8.6	Y	2/17/2009	8.6
8/10/2009	542	562	7.3	Y	8/10/2009	7.3
1/28/2010	542	562	6.4	Y	1/28/2010	6.4
7/14/2010	542	562	6.6	Y	7/14/2010	6.6
5/4/2011	542	562	8.8	Y	5/4/2011	8.8
12/16/2011	542	562	6.9	Y	12/16/2011	6.9
2/10/2012	542	562	6.4	Y	2/10/2012	6.4
8/28/2012	542	562	6.3	Y	8/28/2012	6.3
5/23/2013	542	562	8.2	Y	5/23/2013	8.2
12/9/2013	542	562	7	Y	12/9/2013	7
5/8/2014	542	562	6.3	Y	5/8/2014	6.3
10/17/2014	542	562	7.2	Y	10/17/2014	7.2
4/23/2015	542	562	7.2	Y	4/23/2015	7.2
5/5/2016	542	562	7.2	Y	5/5/2016	7.2

Well # GM-75D2
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?		TCE MK Dataset
6/6/2001	505	525	1100	Y		
10/10/2001	505	525	1400	Y		
12/26/2001	505	525	1300	Y		
4/10/2002	505	525	1000	Y		
7/11/2002	505	525	1400	Y		
10/3/2002	505	525	1500	Y		
1/9/2003	505	525	980	Y		
3/24/2003	505	525	960	Y		
8/1/2003	505	525	1100	Y		
9/30/2003	505	525	890	Y		
1/30/2004	505	525	880	Y		
3/30/2004	505	525	890	Y		
7/16/2004	505	525	730	Y		
11/15/2004	505	525	550	Y		
1/11/2005	505	525	410	Y		
4/16/2005	505	525	330	Y		
6/9/2005	505	525	320	Y		
9/9/2005	505	525	380	Y		
1/12/2006	505	525	190	Y		
3/16/2006	505	525	200	Y		
9/22/2006	505	525	360	Y		
11/27/2006	505	525	380	Y		
3/1/2007	505	525	280	Y		
6/8/2007	505	525	240	Y		
9/27/2007	505	525	250	Y		
12/20/2007	505	525	220	Y		
3/14/2008	505	525	200	Y		
6/25/2008	505	525	180	Y		
8/19/2008	505	525	190	Y		
12/17/2008	505	525	190	Y		
3/17/2009	505	525	140	Y		
5/18/2009	505	525	130	Y		
8/21/2009	505	525	120	Y	8/21/2009	120
11/6/2009	505	525	110	Y	11/6/2009	110
2/3/2010	505	525	82	Y	2/3/2010	82
4/15/2010	505	525	86	Y	4/15/2010	86
8/10/2010	505	525	120	Y	8/10/2010	120
12/15/2010	505	525	130	Y	12/15/2010	130
5/18/2011	505	525	87	Y	5/18/2011	87
7/27/2011	505	525	67	Y	7/27/2011	67
12/23/2011	505	525	44	Y	12/23/2011	44
3/9/2012	505	525	35	Y	3/9/2012	35
5/16/2012	505	525	37	Y	5/16/2012	37
9/6/2012	505	525	35	Y	9/6/2012	35
12/14/2012	505	525	28	Y	12/14/2012	28
6/12/2013	505	525	39	Y	6/12/2013	39
12/19/2013	505	525	38	Y	12/19/2013	38
6/2/2014	505	525	36	Y	6/2/2014	36
6/4/2015	505	525	23.9	Y	6/4/2015	23.9
5/10/2016	505	525	18.8	Y	5/10/2016	18.8

Well # RE103D1
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?	TCE MK Dataset	
					3/11/2014	1000
3/11/2014	625	640	1000	Y	3/11/2014	1000
6/11/2014	625	640	1200	Y	6/11/2014	1200
9/23/2014	625	640	850	Y	9/23/2014	850
12/10/2014	625	640	1300	Y	12/10/2014	1300
3/23/2015	625	640	900	Y	3/23/2015	900
6/22/2015	625	640	810	Y	6/22/2015	810
9/30/2015	625	640	860	Y	9/30/2015	860
12/14/2015	625	640	930	Y	12/14/2015	930
3/14/2016	625	640	1200	Y	3/14/2016	1200
6/23/2016	625	640	930	Y	6/23/2016	930

Well # RE103D2
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect ?		TCE MK Dataset	
3/11/2014	653	673	750	Y		3/11/2014	750
6/11/2014	653	673	670	Y		6/11/2014	670
9/23/2014	653	673	1300	Y		9/23/2014	1300
12/10/2014	653	673	930	Y		12/10/2014	930
3/23/2015	653	673	940	Y		3/23/2015	940
6/22/2015	653	673	770	Y		6/22/2015	770
9/30/2015	653	673	830	Y		9/30/2015	830
12/14/2015	653	673	620	Y		12/14/2015	620
3/14/2016	653	673	860	Y		3/14/2016	860
6/23/2016	653	673	890	Y		6/23/2016	890

Well # RE103D3
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect ?		TCE MK Dataset	
3/11/2014	715	730	430	Y		3/11/2014	430
6/11/2014	715	730	510	Y		6/11/2014	510
9/23/2014	715	730	460	Y		9/23/2014	460
12/10/2014	715	730	600	Y		12/10/2014	600
3/23/2015	715	730	570	Y		3/23/2015	570
6/22/2015	715	730	420	Y		6/22/2015	420
9/30/2015	715	730	470	Y		9/30/2015	470
12/14/2015	715	730	510	Y		12/14/2015	510
3/14/2016	715	730	520	Y		3/14/2016	520
6/23/2016	715	730	500	Y		6/23/2016	500

Well # RE104D1
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect ?		TCE MK Dataset	
3/12/2014	350	370	150	Y		3/12/2014	150
6/12/2014	350	370	160	Y		6/12/2014	160
9/24/2014	350	370	140	Y		9/24/2014	140
12/11/2014	350	370	140	Y		12/11/2014	140
3/23/2015	350	370	110	Y		3/23/2015	110
6/23/2015	350	370	100	Y		6/23/2015	100
9/25/2015	350	370	110	Y		9/25/2015	110
12/15/2015	350	370	110	Y		12/15/2015	110
3/15/2016	350	370	100	Y		3/15/2016	100
6/21/2016	350	370	92	Y		6/21/2016	92

Well # RE104D2
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?		TCE MK Dataset	
3/12/2014	710	730	2.6	Y		3/12/2014	2.6
6/12/2014	710	730	1.8	Y		6/12/2014	1.8
9/24/2014	710	730	2.3	Y		9/24/2014	2.3
12/11/2014	710	730	3.4	Y		12/11/2014	3.4
3/23/2015	710	730	3	Y		3/23/2015	3
6/23/2015	710	730	4.3	Y		6/23/2015	4.3
9/25/2015	710	730	4.2	Y		9/25/2015	4.2
12/15/2015	710	730	6.8	Y		12/15/2015	6.8
3/15/2016	710	730	8.4	Y		3/15/2016	8.4
6/21/2016	710	730	9	Y		6/21/2016	9

**Not Tested, Non-Detect Values:
RE104D3**

Well # RE105D1
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect ?	TCE MK Dataset	
3/11/2014	530	550	160	Y	3/11/2014	160
6/11/2014	530	550	130	Y	6/11/2014	130
9/26/2014	530	550	92	Y	9/26/2014	92
12/11/2014	530	550	120	Y	12/11/2014	120
3/25/2015	530	550	120	Y	3/25/2015	120
6/23/2015	530	550	120	Y	6/23/2015	120
9/28/2015	530	550	94	Y	9/28/2015	94
12/17/2015	530	550	120	Y	12/17/2015	120
3/17/2016	530	550	130	Y	3/17/2016	130
6/27/2016	530	550	110	Y	6/27/2016	110

Well # RE105D2
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?		TCE MK Dataset	
3/11/2014	730	750	620	Y		3/11/2014	620
6/11/2014	730	750	1500	Y		6/11/2014	1500
9/26/2014	730	750	1500	Y		9/26/2014	1500
12/11/2014	730	750	1700	Y		12/11/2014	1700
3/25/2015	730	750	1600	Y		3/25/2015	1600
6/23/2015	730	750	1400	Y		6/23/2015	1400
9/28/2015	730	750	1900	Y		9/28/2015	1900
12/17/2015	730	750	1800	Y		12/17/2015	1800
3/17/2016	730	750	1800	Y		3/17/2016	1800
6/27/2016	730	750	1800	Y		6/27/2016	1800

Well # RE108D1
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?		TCE MK Dataset	
3/12/2014	530	550	130	Y		3/12/2014	130
6/10/2014	530	550	82	Y		6/10/2014	82
9/24/2014	530	550	140	Y		9/24/2014	140
12/12/2014	530	550	140	Y		12/12/2014	140
3/27/2015	530	550	140	Y		3/27/2015	140
6/24/2015	530	550	110	Y		6/24/2015	110
9/28/2015	530	550	98	Y		9/28/2015	98
12/22/2015	530	550	110	Y		12/22/2015	110
3/14/2016	530	550	120	Y		3/14/2016	120
6/27/2016	530	550	82	Y		6/27/2016	82

Well # RE108D2
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?		TCE MK Dataset	
3/12/2014	630	650	4600	Y		3/12/2014	4600
6/10/2014	630	650	3400	Y		6/10/2014	3400
9/24/2014	630	650	3700	Y		9/24/2014	3700
12/12/2014	630	650	3100	Y		12/12/2014	3100
3/27/2015	630	650	3300	Y		3/27/2015	3300
6/24/2015	630	650	3900	Y		6/24/2015	3900
9/28/2015	630	650	3400	Y		9/28/2015	3400
12/22/2015	630	650	2900	Y		12/22/2015	2900
3/14/2016	630	650	3800	Y		3/14/2016	3800
6/27/2016	630	650	3000	Y		6/27/2016	3000

Well # TT101D
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect ?		TCE MK Dataset	
3/13/2014	740	760	52	Y		3/13/2014	52
5/27/2014	740	760	57	Y		5/27/2014	57
9/25/2014	740	760	66	Y		9/25/2014	66
12/9/2014	740	760	67	Y		12/9/2014	67
3/24/2015	740	760	61	Y		3/24/2015	61
6/22/2015	740	760	66	Y		6/22/2015	66
9/29/2015	740	760	67	Y		9/29/2015	67
12/17/2015	740	760	74	Y		12/17/2015	74
3/16/2016	740	760	67	Y		3/16/2016	67
6/21/2016	740	760	73	Y		6/21/2016	73

Well # TT101D1
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect?		TCE MK Dataset	
3/13/2014	560	600	170	Y		3/13/2014	170
5/27/2014	560	600	93	Y		5/27/2014	93
9/25/2014	560	600	160	Y		9/25/2014	160
12/9/2014	560	600	160	Y		12/9/2014	160
3/24/2015	560	600	170	Y		3/24/2015	170
6/22/2015	560	600	180	Y		6/22/2015	180
9/29/2015	560	600	170	Y		9/29/2015	170
12/17/2015	560	600	200	Y		12/17/2015	200
3/16/2016	560	600	180	Y		3/16/2016	180
6/21/2016	560	600	190	Y		6/21/2016	190

Well # TT101D2
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect ?		TCE MK Dataset	
3/13/2014	740	770	250	Y		3/13/2014	250
5/27/2014	740	770	300	Y		5/27/2014	300
9/25/2014	740	770	560	Y		9/25/2014	560
12/9/2014	740	770	520	Y		12/9/2014	520
3/24/2015	740	770	480	Y		3/24/2015	480
6/22/2015	740	770	620	Y		6/22/2015	620
9/29/2015	740	770	640	Y		9/29/2015	640
12/17/2015	740	770	510	Y		12/17/2015	510
3/16/2016	740	770	590	Y		3/16/2016	590
6/21/2016	740	770	690	Y		6/21/2016	690

Not Tested, Non-Detect Values:

TT102D1

TT102D2

**Well # RE120D1
TCE Results and
Mann-Kendall Dataset**

Date	Top Screen	Bottom Screen	TCE	Detect ?			TCE MK Dataset
12/12/2014	630	650	1300	Y			12/12/2014 1300
3/25/2015	630	650	1300	Y			3/25/2015 1300
9/29/2015	630	650	1300	Y			9/29/2015 1300
12/18/2015	630	650	1300	Y			12/18/2015 1300
3/16/2016	630	650	1200	Y			3/16/2016 1200
6/22/2016	630	650	1200	Y			6/22/2016 1200

Well # RE120D2
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect ?		TCE MK Dataset	
12/12/2014	690	710	900	Y		12/12/2014	900
3/25/2015	690	710	830	Y		3/25/2015	830
9/29/2015	690	710	760	Y		9/29/2015	760
12/29/2015	690	710	680	Y		12/29/2015	680
3/16/2016	690	710	780	Y		3/16/2016	780
6/22/2016	690	710	720	Y		6/22/2016	720

**Well # RE120D3
TCE Results and
Mann-Kendall Dataset**

Date	Top Screen	Bottom Screen	TCE	Detect ?		TCE MK Dataset	
12/12/2014	740	760	3.4	Y		12/12/2014	3.4
3/25/2015	740	760	0.74	Y		3/25/2015	0.74
9/29/2015	740	760	120	Y		9/29/2015	120
12/29/2015	740	760	29	Y		12/29/2015	29
3/16/2016	740	760	55	Y		3/16/2016	55
6/22/2016	740	760	46	Y		6/22/2016	46

**Well # RE122D1
TCE Results and
Mann-Kendall Dataset**

Date	Top Screen	Bottom Screen	TCE	Detect ?		TCE MK Dataset	
3/24/2015	520	540	570	Y		3/24/2015	570
9/30/2015	520	540	600	Y		9/30/2015	600
12/15/2015	520	540	600	Y		12/15/2015	600
3/15/2016	520	540	610	Y		3/15/2016	610
6/22/2016	520	540	610	Y		6/22/2016	610

**Well # RE122D2
TCE Results and
Mann-Kendall Dataset**

Date	Top Screen	Bottom Screen	TCE	Detect ?		TCE MK Dataset	
3/24/2015	590	610	4600	Y		3/24/2015	4600
9/30/2015	590	610	5200	Y		9/30/2015	5200
12/15/2015	590	610	4700	Y		12/15/2015	4700
3/15/2016	590	610	5300	Y		3/15/2016	5300
6/22/2016	590	610	5500	Y		6/22/2016	5500

**Well # RE122D3
TCE Results and
Mann-Kendall Dataset**

Date	Top Screen	Bottom Screen	TCE	Detect ?		TCE MK Dataset	
3/24/2015	715	735	6.8	Y		3/24/2015	6.8
9/30/2015	715	735	10	Y		9/30/2015	10
12/15/2015	715	735	2.5	Y		12/15/2015	2.5
3/15/2016	715	735	2.1	Y		3/15/2016	2.1
6/22/2016	715	735	7.4	Y		6/22/2016	7.4

**Well # RE123D1
TCE Results and
Mann-Kendall Dataset**

Date	Top Screen	Bottom Screen	TCE	Detected?		TCE MK Dataset	
9/29/2015	480	500	12	Y		9/29/2015	12
12/21/2015	480	500	6.1	Y		12/21/2015	6.1
3/17/2016	480	500	6.6	Y		3/17/2016	6.6
6/20/2016	480	500	7.4	Y		6/20/2016	7.4

Well # RE123D2
TCE Results and
Mann-Kendall Dataset

Date	Top Screen	Bottom Screen	TCE	Detect ?		TCE MK Dataset	
9/29/2015	635	655	1.4	Y		9/29/2015	1.4
12/21/2015	635	655	1.5	Y		12/21/2015	1.5
3/17/2016	635	655	1.9	Y		3/17/2016	1.9
6/20/2016	635	655	1.5	Y		6/20/2016	1.5

**Not Tested, Non-Detect Values:
RE123D3**

Appendix B
Mann-Kendall Results and First Order Change Rates

Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = FW-03

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	9/20/2005	3	1.10	
2	3/14/2006	4	1.39	
3	10/5/2006	3	1.10	
4	3/6/2007	5.6	1.72	
5	9/11/2007	2.5	0.92	
6	3/13/2008	5	1.61	
7	9/5/2008	2.5	0.92	
8	2/27/2009	3.4	1.22	
9	8/25/2009	2.8	1.03	
10	1/29/2010	2.5	0.92	
11	8/6/2010	2.3	0.83	
12	5/5/2011	3.1	1.13	
13	12/28/2011	3.2	1.16	
14	2/17/2012	3.4	1.22	
15	6/10/2013	3.5	1.25	
16	5/19/2014	4.5	1.50	
17	6/2/2015	2.4	0.88	
18	4/27/2016	2.2	0.79	

Mann Kendall Statistic (S) =	-22.0	-0.00006	
Number of Rounds (n) =	18		
Average =	3.27		
Standard Deviation =	0.957		
Coefficient of Variation(CV)=	0.293		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	No Trend		
Trend \geq 90% Confidence Level	No Trend		

Stability Test, If No Trend Exists at 80% Confidence Level	CV \leq 1		
	STABLE		

Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-16SR

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	7/24/2003	2.5		2.5
2	10/8/2003	2.5		2.5
3	1/9/2004	2.5		2.5
4	3/29/2004	2		2
5	10/1/2004	2.5		2.5
6	4/11/2005	2.5		2.5
7	9/7/2005	5		5
8	4/10/2006	4		4
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	10.0	0.00209
Number of Rounds (n) =	8	
Average =	2.94	
Standard Deviation =	1.016	
Coefficient of Variation(CV)=	0.346	

Error Check, Blank if No Errors Detected

Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	No Trend		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By = BAH **Date =** August 25 2015

Not Tested, Non-Detect Values:
GM-17SR

Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-78S

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	12/23/2005	2.5	0.916290732	
2	3/15/2006	0.3	-1.203972804	
3	9/26/2006	0.9	-0.105360516	
4	2/8/2007	1.1	0.09531018	
5	9/25/2007	2.5	0.916290732	
6	3/12/2008	2.5	0.916290732	
7	8/14/2008	2.5	0.916290732	
8	2/24/2009	2.5	0.916290732	
9	8/17/2009	2.5	0.916290732	
10	1/29/2010	0.28	-1.272965676	
11	7/16/2010	0.33	-1.108662625	
12	5/5/2011	2.5	0.916290732	
13	12/9/2011	2.5	0.916290732	
14	2/16/2012	2.5	0.916290732	
15	5/29/2013	2.5	0.916290732	
16	5/15/2014	2.5	0.916290732	
17	6/1/2015	0.57	-0.562118918	
18	4/28/2016	0.45	-0.798507696	

Mann Kendall Statistic (S) =	4.0	-0.00005	
Number of Rounds (n) =	18		
Average =	1.75		
Standard Deviation =	0.991		
Coefficient of Variation(CV)=	0.568		

Error Check, Blank if No Errors Detected

Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		

Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1	STABLE	
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Data Entry By =	BAH	Date =	Jan 4 2017
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Not Tested, Non-Detect Values:

HN-40S

HN-42S

Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-17I

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	2/9/2007	2.5	0.92	
2	9/13/2007	2.5	0.92	
3	3/7/2008	2.5	0.92	
4	8/11/2008	2.5	0.92	
5	2/17/2009	2.5	0.92	
6	8/12/2009	0.59	-0.53	
7	2/16/2010	0.45	-0.80	
8	7/29/2010	2.5	0.92	
9	5/11/2011	2.5	0.92	
10	12/21/2011	2.5	0.92	
11	2/15/2012	2.5	0.92	
12	9/10/2012	0.45	-0.80	
13	6/11/2013	0.86	-0.15	
14	12/19/2013	0.72	-0.33	
15	5/5/2014	2.5	0.92	
16	10/23/2014	0.76	-0.27	
17	4/22/2015	1.7	0.53	
18	5/2/2016	0.65	-0.43	

Mann Kendall Statistic (S) =	-43.0	-0.00028	
Number of Rounds (n) =	18		
Average =	1.73		
Standard Deviation =	0.920		
Coefficient of Variation(CV)=	0.531		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	DECREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-741

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	2/27/2007	2.5	0.92	
2	9/7/2007	2.5	0.92	
3	3/17/2008	2.5	0.92	
4	8/18/2008	2.5	0.92	
5	2/17/2009	2.5	0.92	
6	8/10/2009	2.5	0.92	
7	1/28/2010	2.5	0.92	
8	7/14/2010	2.5	0.92	
9	5/4/2011	2.5	0.92	
10	12/16/2011	0.28	-1.27	
11	2/10/2012	2.5	0.92	
12	8/28/2012	0.34	-1.08	
13	5/23/2013	0.35	-1.05	
14	12/9/2013	0.79	-0.24	
15	5/8/2014	0.3	-1.20	
16	10/17/2014	0.63	-0.46	
17	4/21/2015	0.76	-0.27	
18	4/13/2016	0.62	-0.48	

Mann Kendall Statistic (S) =	-66.0	-0.00065	
Number of Rounds (n) =	18		
Average =	1.62		
Standard Deviation =	1.027		
Coefficient of Variation(CV)=	0.636		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	DECREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-781

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	12/23/2005	0.7	-0.356674944	
2	3/15/2006	0.9	-0.105360516	
3	9/26/2006	0.6	-0.510825624	
4	2/8/2007	0.69	-0.371063681	
5	9/25/2007	2.5	0.916290732	
6	3/12/2008	2.5	0.916290732	
7	8/14/2008	2.5	0.916290732	
8	2/24/2009	2.5	0.916290732	
9	8/17/2009	2.5	0.916290732	
10	1/29/2010	2.5	0.916290732	
11	7/16/2010	2.5	0.916290732	
12	5/5/2011	2.5	0.916290732	
13	12/9/2011	2.5	0.916290732	
14	2/16/2012	2.5	0.916290732	
15	5/29/2013	0.31	-1.171182982	
16	5/15/2014	0.58	-0.544727175	
17	6/1/2015	0.39	-0.94160854	
18	4/28/2016	0.38	-0.967584026	

Mann Kendall Statistic (S) =	-18.0	-0.00024	
Number of Rounds (n) =	18		
Average =	1.64		
Standard Deviation =	0.996		
Coefficient of Variation(CV)=	0.607		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	No Trend		
Trend \geq 90% Confidence Level	No Trend		

Stability Test, If No Trend Exists at 80% Confidence Level	CV \leq 1		
	STABLE		

Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-791

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	11/5/2009	0.5	-0.69	
2	1/22/2010	0.5	-0.69	
3	4/13/2010	0.5	-0.69	
4	7/16/2010	0.5	-0.69	
5	12/13/2010	0.5	-0.69	
6	5/3/2011	28	3.33	
7	7/26/2011	0.5	-0.69	
8	12/26/2011	0.5	-0.69	
9	2/14/2012	30	3.40	
10	5/12/2012	0.5	-0.69	
11	9/5/2012	0.5	-0.69	
12	12/31/2012	0.5	-0.69	
13	5/28/2013	0.23	-1.47	
14	12/17/2013	0.33	-1.11	
15	5/14/2014	0.31	-1.17	
16	10/24/2014	0.5	-0.69	
17	4/22/2015	0.5	-0.69	
18	4/13/2016	0.5	-0.69	

Mann Kendall Statistic (S) =	-27.0	-0.00038	
Number of Rounds (n) =	18		
Average =	3.63		
Standard Deviation =	9.236		
Coefficient of Variation(CV)=	2.543		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	No Trend		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = HN-241

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	10/6/2004	36	3.58	
2	4/12/2005	2.5	0.92	
3	9/20/2005	22	3.09	
4	3/14/2006	37	3.61	
5	9/29/2006	15	2.71	
6	2/12/2007	11	2.40	
7	3/13/2008	15	2.71	
8	9/5/2008	19	2.94	
9	2/27/2009	21	3.04	
10	8/25/2009	22	3.09	
11	8/6/2010	32	3.47	
12	5/17/2011	35	3.56	
13	12/28/2011	28	3.33	
14	2/17/2012	27	3.30	
15	6/10/2013	16	2.77	
16	5/19/2014	18	2.89	
17	6/2/2015	18.9	2.94	
18	4/28/2016	15	2.71	

Mann Kendall Statistic (S) =	-3.0	0.00008	
Number of Rounds (n) =	18		
Average =	21.69		
Standard Deviation =	9.296		
Coefficient of Variation(CV)=	0.429		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	No Trend		
Trend \geq 90% Confidence Level	No Trend		

Stability Test, If No Trend Exists at 80% Confidence Level	CV \leq 1		
	STABLE		

Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = HN-291

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	9/27/2000	2	0.69	
2	2/1/2001	2	0.69	
3	5/31/2001	2.5	0.92	
4	10/4/2001	1	0.00	
5	1/3/2002	2	0.69	
6	4/11/2002	1	0.00	
7	7/9/2002	1	0.00	
8	10/15/2002	2.5	0.92	
9	12/20/2002	2.5	0.92	
10	3/20/2003	0.7	-0.36	
11	7/21/2003	2.5	0.92	
12	10/14/2003	1	0.00	
13	1/7/2004	2	0.69	
14	3/18/2004	1	0.00	
15	10/6/2004	0.6	-0.51	
16	4/12/2005	2.5	0.92	
17	9/20/2005	1	0.00	
18	3/14/2006	0.9	-0.11	

Mann Kendall Statistic (S) =	-34.0	-0.00031	
Number of Rounds (n) =	18		
Average =	1.59		
Standard Deviation =	0.734		
Coefficient of Variation(CV)=	0.460		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	No Trend		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	August 25 2015
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = HN-401

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	4/13/2006	3		3
2	9/27/2006	0.5		0.5
3	2/7/2007	2.5		2.5
4	9/24/2007	2.5		2.5
5	8/12/2008	2.5		2.5
6	2/23/2009	2.5		2.5
7	7/14/2009	2.5		2.5
8	8/24/2009	2.5		2.5
9	10/22/2009	2.5		2.5
10	1/28/2010	2.5		2.5
11	7/15/2010	1.2		1.2
12	5/3/2011	2.3		2.3
13	12/19/2011	8.7		8.7
14	2/7/2012	11		11
15	5/28/2013	22		22
16	5/12/2014	22		22
17	4/20/2015	2.5		2.5
18	4/13/2016	2.5		2.5

Mann Kendall Statistic (S) =	33.0		0.00299
Number of Rounds (n) =	18		
Average =	5.32		
Standard Deviation =	6.573		
Coefficient of Variation(CV)=	1.236		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	INCREASING		
Trend \geq 90% Confidence Level	No Trend		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = HN-421

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	2/7/2007	10	2.30	
2	9/24/2007	12	2.48	
3	3/12/2008	15	2.71	
4	3/13/2008	2.5	0.92	
5	8/12/2008	17	2.83	
6	2/23/2009	18	2.89	
7	7/8/2009	20	3.00	
8	8/20/2009	19	2.94	
9	10/21/2009	17	2.83	
10	1/28/2010	12	2.48	
11	7/15/2010	7.3	1.99	
12	5/2/2011	8.1	2.09	
13	12/17/2011	4.3	1.46	
14	2/6/2012	3.9	1.36	
15	5/28/2013	3	1.10	
16	5/12/2014	2.5	0.92	
17	4/27/2015	0.56	-0.58	
18	4/26/2016	0.71	-0.34	

Mann Kendall Statistic (S) =	-76.0	-0.00091	
Number of Rounds (n) =	18		
Average =	9.60		
Standard Deviation =	6.820		
Coefficient of Variation(CV)=	0.710		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	DECREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = BPOW1-1

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	11/30/2011	1.1		1.1
2	2/21/2012	1.1		1.1
3	5/1/2012	1.1		1.1
4	8/20/2012	0.95		0.95
5	11/29/2012	0.9		0.9
6	2/6/2013	0.88		0.88
7	5/14/2013	0.82		0.82
8	8/14/2013	0.86		0.86
9	11/25/2013	0.9		0.9
10	2/11/2014	0.9		0.9
11	4/17/2014	0.86		0.86
12	8/4/2014	0.84		0.84
13	12/9/2014	1.00		1
14	2/4/2015	1.1		1.1
15	5/27/2015	0.97		0.97
16	8/11/2015	1.10		1.1
17	11/2/2015	1.1		1.1
18	6/8/2016	1.1		1.1

Mann Kendall Statistic (S) =	12.0	0.00004
Number of Rounds (n) =	18	
Average =	0.98	
Standard Deviation =	0.110	
Coefficient of Variation(CV)=	0.112	

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	No Trend	
Trend \geq 90% Confidence Level	No Trend	

Stability Test, If No Trend Exists at 80% Confidence Level	CV \leq 1	STABLE	
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = BPOW1-2

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	2/20/2012	0.33		0.33
2	5/1/2012	0.33		0.33
3	8/20/2012	0.3		0.3
4	12/5/2012	0.4		0.4
5	12/11/2012	0.25		0.25
6	2/6/2013	0.63		0.63
7	5/14/2013	0.33		0.33
8	8/15/2013	0.25		0.25
9	11/22/2013	0.25		0.25
10	2/11/2014	0.55		0.55
11	4/17/2014	0.25		0.25
12	8/4/2014	0.25		0.25
13	12/8/2014	0.37		0.37
14	2/3/2015	0.62		0.62
15	5/27/2015	0.45		0.45
16	8/11/2015	0.3		0.3
17	11/2/2015	0.23		0.23
18	6/7/2016	0.85		0.85

Mann Kendall Statistic (S) =	5.0	0.00012
Number of Rounds (n) =	18	
Average =	0.39	
Standard Deviation =	0.172	
Coefficient of Variation(CV)=	0.446	

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level

No Trend

Trend \geq 90% Confidence Level

No Trend

Stability Test, If No Trend Exists at
80% Confidence Level

CV \leq 1
STABLE

Data Entry By =

BAH

Date =

Jan 4 2017

Not Tested, Non-Detect Values:

BPOW 1-3
BPOW 1-4
BPOW 1-5
BPOW 1-6

Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-15D

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/11/2008	0.5	-0.69	
2	8/13/2008	0.5	-0.69	
3	2/27/2009	1.5	0.41	
4	7/7/2009	1.3	0.26	
5	8/14/2009	1.2	0.18	
6	10/23/2009	1.1	0.10	
7	1/21/2010	0.93	-0.07	
8	7/13/2010	0.76	-0.27	
9	5/6/2011	0.6	-0.51	
10	12/10/2011	0.31	-1.17	
11	2/8/2012	0.51	-0.67	
12	9/12/2012	0.55	-0.60	
13	5/24/2013	0.36	-1.02	
14	12/12/2013	0.39	-0.94	
15	6/4/2014	0.48	-0.73	
16	10/20/2014	0.5	-0.69	
17	5/7/2015	0.34	-1.08	
18	6/30/2016	0.5	-0.69	

Mann Kendall Statistic (S) =	-73.0	-0.00032	
Number of Rounds (n) =	18		
Average =	0.69		
Standard Deviation =	0.362		
Coefficient of Variation(CV)=	0.529		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	DECREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-17D

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	2/9/2007	0.36	-1.02	
2	9/13/2007	2.5	0.92	
3	3/7/2008	2.5	0.92	
4	8/11/2008	2.5	0.92	
5	2/17/2009	0.32	-1.14	
6	8/12/2009	0.47	-0.76	
7	2/17/2010	0.49	-0.71	
8	7/29/2010	0.44	-0.82	
9	5/11/2011	0.54	-0.62	
10	12/21/2011	0.36	-1.02	
11	2/9/2012	0.33	-1.11	
12	9/10/2012	2.5	0.92	
13	6/11/2013	0.34	-1.08	
14	12/19/2013	0.28	-1.27	
15	5/5/2014	0.66	-0.42	
16	10/23/2014	0.3	-1.20	
17	4/22/2015	0.33	-1.11	
18	5/2/2016	0.61	-0.49	

Mann Kendall Statistic (S) =	-39.0	-0.00032	
Number of Rounds (n) =	18		
Average =	0.88		
Standard Deviation =	0.898		
Coefficient of Variation(CV)=	1.021		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	DECREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-18D

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	2/13/2007	7	1.95	
2	9/14/2007	6.4	1.86	
3	3/21/2008	2.5	0.92	
4	8/26/2008	2.5	0.92	
5	4/1/2009	1.5	0.41	
6	8/13/2009	1	0.00	
7	2/17/2010	3.2	1.16	
8	7/30/2010	2	0.69	
9	5/11/2011	1.7	0.53	
10	12/22/2011	0.83	-0.19	
11	2/17/2012	1.1	0.10	
12	9/10/2012	1.4	0.34	
13	6/10/2013	0.92	-0.08	
14	12/31/2013	1.3	0.26	
15	5/1/2014	1.6	0.47	
16	10/15/2014	0.75	-0.29	
17	4/21/2015	0.87	-0.14	
18	6/14/2016	0.39	-0.94	

Mann Kendall Statistic (S) =	-98.0	-0.00059	
Number of Rounds (n) =	18		
Average =	2.05		
Standard Deviation =	1.837		
Coefficient of Variation(CV)=	0.895		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	DECREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-21D

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/20/2009	0.69		0.69
2	5/17/2009	0.74		0.74
3	8/12/2009	0.53		0.53
4	11/13/2009	0.67		0.67
5	2/8/2010	0.89		0.89
6	4/19/2010	0.87		0.87
7	8/4/2010	1.2		1.2
8	12/13/2010	1.7		1.7
9	5/12/2011	0.55		0.55
10	7/27/2011	0.5		0.5
11	12/12/2011	0.43		0.43
12	2/14/2012	0.36		0.36
13	5/9/2012	0.43		0.43
14	12/3/2012	2		2
15	5/29/2013	1.8		1.8
16	6/3/2014	0.97		0.97
17	4/24/2015	2.6		2.6
18	5/5/2016	1.7		1.7

Mann Kendall Statistic (S) =	31.0	0.00051
Number of Rounds (n) =	18	
Average =	1.04	
Standard Deviation =	0.652	
Coefficient of Variation(CV)=	0.630	

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	INCREASING	
Trend \geq 90% Confidence Level	No Trend	

Stability Test, If No Trend Exists at 80% Confidence Level	NA	
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-39DA

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	2/13/2007	17	2.833213344	
2	9/6/2007	14	2.63905733	
3	3/18/2008	19	2.944438979	
4	8/20/2008	13	2.564949357	
5	3/16/2009	5.1	1.62924054	
6	8/10/2009	6.5	1.871802177	
7	1/29/2010	10	2.302585093	
8	7/30/2010	5.5	1.704748092	
9	5/9/2011	1.2	0.182321557	
10	12/15/2011	0.69	-0.371063681	
11	3/6/2012	0.74	-0.301105093	
12	8/28/2012	1.1	0.09531018	
13	6/14/2013	2.8	1.029619417	
14	12/11/2013	3.7	1.30833282	
15	5/9/2014	1.2	0.182321557	
16	10/15/2014	0.66	-0.415515444	
17	4/23/2015	1	0	
18	5/3/2016	6.1	1.808288771	

Mann Kendall Statistic (S) =	-82.0	-0.00081
Number of Rounds (n) =	18	
Average =	6.07	
Standard Deviation =	6.016	
Coefficient of Variation(CV)=	0.991	

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	DECREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-39DB

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	2/28/2007	43		43
2	9/14/2007	27		27
3	3/18/2008	46		46
4	8/20/2008	62		62
5	3/16/2009	68		68
6	8/10/2009	52		52
7	1/29/2010	34		34
8	7/30/2010	66		66
9	5/9/2011	94		94
10	12/15/2011	62		62
11	3/5/2012	64		64
12	8/28/2012	56		56
13	6/14/2013	80		80
14	12/11/2013	70		70
15	5/9/2014	52		52
16	10/15/2014	52.7		52.7
17	4/23/2015	43.9		43.9
18	5/3/2016	21		21

Mann Kendall Statistic (S) =	7.0	0.00064
Number of Rounds (n) =	18	
Average =	55.20	
Standard Deviation =	18.138	
Coefficient of Variation(CV)=	0.329	

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	No Trend	
Trend \geq 90% Confidence Level	No Trend	

Stability Test, If No Trend Exists at 80% Confidence Level	CV \leq 1	STABLE	
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Data Entry By = BAH **Date =** Jan 4 2017

Site Name : Bethpage		Well Number = GM-73D		
Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	2/28/2007	13		13
2	9/7/2007	10		10
3	3/18/2008	6.4		6.4
4	8/21/2008	7.6		7.6
5	2/17/2009	16		16
6	8/10/2009	4.6		4.6
7	1/28/2010	3.3		3.3
8	8/3/2010	5.6		5.6
9	5/4/2011	58		58
10	12/17/2011	59		59
11	2/10/2012	68		68
12	8/27/2012	8.9		8.9
13	5/23/2013	23		23
14	12/11/2013	19		19
15	5/9/2014	11		11
16	10/17/2014	14.2		14.2
17	4/17/2015	11.1		11.1
18	6/29/2016	7.9		7.9
Mann Kendall Statistic (S) =		19.0		0.00239
Number of Rounds (n) =		18		
Average =		19.26		
Standard Deviation =		20.233		
Coefficient of Variation(CV)=		1.051		
Error Check, Blank if No Errors Detected				
Trend ≥ 80% Confidence Level		No Trend		
Trend ≥ 90% Confidence Level		No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level		CV > 1 NON-STABLE		
Data Entry By =		BAH	Date =	Jan 4 2017

Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-74D

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	2/27/2007	2.5	0.92	
2	9/7/2007	2.5	0.92	
3	3/17/2008	2.5	0.92	
4	8/18/2008	2.5	0.92	
5	2/17/2009	2.5	0.92	
6	8/10/2009	3.3	1.19	
7	1/28/2010	2.6	0.96	
8	7/14/2010	2.3	0.83	
9	5/4/2011	1.8	0.59	
10	12/16/2011	1.7	0.53	
11	2/10/2012	1.7	0.53	
12	8/28/2012	1.4	0.34	
13	5/23/2013	1.6	0.47	
14	12/9/2013	1.5	0.41	
15	5/8/2014	1	0.00	
16	10/17/2014	0.99	-0.01	
17	4/23/2015	1	0.00	
18	4/13/2016	1.2	0.18	

Mann Kendall Statistic (S) =	-109.0	-0.00034	
Number of Rounds (n) =	18		
Average =	1.92		
Standard Deviation =	0.683		
Coefficient of Variation(CV)=	0.355		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	DECREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-79D

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	11/5/2009	33	3.50	
2	1/22/2010	37	3.61	
3	4/13/2010	34	3.53	
4	7/16/2010	35	3.56	
5	12/13/2010	31	3.43	
6	5/3/2011	5	1.61	
7	7/26/2011	26	3.26	
8	12/26/2011	26	3.26	
9	2/14/2012	5	1.61	
10	5/18/2012	26	3.26	
11	9/5/2012	18	2.89	
12	12/31/2012	27	3.30	
13	5/28/2013	19	2.94	
14	12/17/2013	13	2.56	
15	5/14/2014	18	2.89	
16	10/24/2014	15.5	2.74	
17	6/13/2015	18	2.89	
18	4/13/2016	25.9	3.25	

Mann Kendall Statistic (S) =	-68.0	-0.00021	
Number of Rounds (n) =	18		
Average =	22.91		
Standard Deviation =	9.615		
Coefficient of Variation(CV)=	0.420		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	DECREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = HN-29D

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	9/27/2000	1	0.00	
2	2/1/2001	2.5	0.92	
3	5/31/2001	2.5	0.92	
4	10/4/2001	2	0.69	
5	1/3/2002	1	0.00	
6	4/11/2002	1	0.00	
7	7/9/2002	1	0.00	
8	10/15/2002	1	0.00	
9	12/20/2002	2	0.69	
10	3/20/2003	1	0.00	
11	7/21/2003	1	0.00	
12	10/14/2003	0.9	-0.11	
13	1/7/2004	1	0.00	
14	3/18/2004	0.6	-0.51	
15	10/6/2004	0.8	-0.22	
16	4/14/2005	0.7	-0.36	
17	9/20/2005	0.6	-0.51	
18	3/14/2006	2.5	0.92	

Mann Kendall Statistic (S) =	-68.0	-0.00032	
Number of Rounds (n) =	18		
Average =	1.28		
Standard Deviation =	0.676		
Coefficient of Variation(CV)=	0.527		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	DECREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	August 25 2015
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Not Tested, Non-Detect Values:

**BPOW 2-1
BPOW 2-2
BPOW 2-3
BPOW 3-1
BPOW 3-2
BPOW 3-3**

Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = BPOW3-4

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	12/7/2011	46		46
2	3/8/2012	45		45
3	5/16/2012	51		51
4	9/4/2012	58		58
5	12/28/2012	59		59
6	2/19/2013	57		57
7	5/21/2013	53		53
8	8/26/2013	64		64
9	12/6/2013	49		49
10	2/25/2014	46		46
11	4/22/2014	50		50
12	8/12/2014	54		54
13	11/26/2014	74.6		74.6
14	3/31/2015	64.2		64.2
15	6/9/2015	52.9		52.9
16	8/25/2015	60.9		60.9
17	12/11/2015	80.7		80.7
18	6/22/2016	63		63

Mann Kendall Statistic (S) =	62.0	0.01140
Number of Rounds (n) =	18	
Average =	57.13	
Standard Deviation =	9.717	
Coefficient of Variation(CV)=	0.170	

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	INCREASING		
Trend \geq 90% Confidence Level	INCREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Not Tested, Non-Detect Values:

BPOW 4-1

BPOW 4-2

Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = BPOW4-1R

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	12/15/2014	0.84		0.84
2	3/30/2015	0.79		0.79
3	6/3/2015	0.58		0.58
4	8/26/2015	0.92		0.92
5	11/13/2015	1		1
6	5/31/2016	1.1		1.1
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	9.0	0.00068
Number of Rounds (n) =	6	
Average =	0.87	
Standard Deviation =	0.181	
Coefficient of Variation(CV)=	0.208	

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	INCREASING		
Trend \geq 90% Confidence Level	INCREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By = BAH **Date =** Jan 4 2017

Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = BPOW4-2R

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	12/15/2014	0.73		0.73
2	3/27/2015	0.78		0.78
3	6/3/2015	0.82		0.82
4	8/24/2015	1.6		1.6
5	11/12/2015	1.5		1.5
6	6/1/2016	1.9		1.9
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	13.0	0.00248
Number of Rounds (n) =	6	
Average =	1.22	
Standard Deviation =	0.506	
Coefficient of Variation(CV)=	0.414	

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	INCREASING	
Trend \geq 90% Confidence Level	INCREASING	

Stability Test, If No Trend Exists at 80% Confidence Level	NA	
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-15D2

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/11/2008	10	2.30	
2	8/13/2008	10	2.30	
3	2/27/2009	11	2.40	
4	7/7/2009	10	2.30	
5	8/14/2009	10	2.30	
6	10/23/2009	11	2.40	
7	1/21/2010	10	2.30	
8	7/13/2010	10	2.30	
9	5/6/2011	11	2.40	
10	12/10/2011	9.6	2.26	
11	2/8/2012	10	2.30	
12	9/12/2012	10	2.30	
13	5/24/2013	11	2.40	
14	12/12/2013	10	2.30	
15	6/4/2014	9.2	2.22	
16	10/20/2014	9.5	2.25	
17	5/7/2015	9.7	2.27	
18	4/13/2016	8.8	2.17	

Mann Kendall Statistic (S) =	-55.0	-0.00004	
Number of Rounds (n) =	18		
Average =	10.04		
Standard Deviation =	0.620		
Coefficient of Variation(CV)=	0.062		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	DECREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-73D2

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	2/28/2007	67	4.20	
2	9/7/2007	72	4.28	
3	3/17/2008	58	4.06	
4	8/21/2008	44	3.78	
5	2/17/2009	40	3.69	
6	8/10/2009	69	4.23	
7	1/28/2010	47	3.85	
8	8/3/2010	53	3.97	
9	5/4/2011	110	4.70	
10	12/17/2011	94	4.54	
11	2/10/2012	93	4.53	
12	8/27/2012	60	4.09	
13	5/23/2013	44	3.78	
14	12/11/2013	29	3.37	
15	5/8/2014	25	3.22	
16	10/17/2014	40	3.69	
17	4/17/2015	46.7	3.84	
18	5/6/2016	33.2	3.50	

Mann Kendall Statistic (S) =	-51.0	-0.00018	
Number of Rounds (n) =	18		
Average =	56.94		
Standard Deviation =	23.596		
Coefficient of Variation(CV)=	0.414		

Error Check, Blank if No Errors Detected

Trend ≥ 80% Confidence Level	DECREASING		
Trend ≥ 90% Confidence Level	DECREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-74D2

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	2/27/2007	7.4	2.00	
2	9/7/2007	7	1.95	
3	3/17/2008	7.3	1.99	
4	8/18/2008	6.4	1.86	
5	2/17/2009	8.6	2.15	
6	8/10/2009	7.3	1.99	
7	1/28/2010	6.4	1.86	
8	7/14/2010	6.6	1.89	
9	5/4/2011	8.8	2.17	
10	12/16/2011	6.9	1.93	
11	2/10/2012	6.4	1.86	
12	8/28/2012	6.3	1.84	
13	5/23/2013	8.2	2.10	
14	12/9/2013	7	1.95	
15	5/8/2014	6.3	1.84	
16	10/17/2014	7.2	1.97	
17	4/23/2015	7.2	1.97	
18	5/5/2016	7.2	1.97	

Mann Kendall Statistic (S) =	-18.0	-0.00001	
Number of Rounds (n) =	18		
Average =	7.14		
Standard Deviation =	0.751		
Coefficient of Variation(CV)=	0.105		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	No Trend		
Trend \geq 90% Confidence Level	No Trend		

Stability Test, If No Trend Exists at 80% Confidence Level	CV \leq 1		
	STABLE		

Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = GM-75D2

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	8/21/2009	120	4.79	
2	11/6/2009	110	4.70	
3	2/3/2010	82	4.41	
4	4/15/2010	86	4.45	
5	8/10/2010	120	4.79	
6	12/15/2010	130	4.87	
7	5/18/2011	87	4.47	
8	7/27/2011	67	4.20	
9	12/23/2011	44	3.78	
10	3/9/2012	35	3.56	
11	5/16/2012	37	3.61	
12	9/6/2012	35	3.56	
13	12/14/2012	28	3.33	
14	6/12/2013	39	3.66	
15	12/19/2013	38	3.64	
16	6/2/2014	36	3.58	
17	6/4/2015	23.9	3.17	
18	5/10/2016	18.8	2.93	

Mann Kendall Statistic (S) =	-105.0	-0.00078	
Number of Rounds (n) =	18		
Average =	63.15		
Standard Deviation =	37.511		
Coefficient of Variation(CV)=	0.594		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	DECREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = RE103D1

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/11/2014	1000	6.91	
2	6/11/2014	1200	7.09	
3	9/23/2014	850	6.75	
4	12/10/2014	1300	7.17	
5	3/23/2015	900	6.80	
6	6/22/2015	810	6.70	
7	9/30/2015	860	6.76	
8	12/14/2015	930	6.84	
9	3/14/2016	1200	7.09	
10	6/23/2016	930	6.84	
11				
12				
13				
14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	-1.0	-0.00036	
Number of Rounds (n) =	10		
Average =	998.00		
Standard Deviation =	172.550		
Coefficient of Variation(CV)=	0.173		

Error Check, Blank if No Errors Detected

Trend ≥ 80% Confidence Level	No Trend		
Trend ≥ 90% Confidence Level	No Trend		

Stability Test, If No Trend Exists at 80% Confidence Level	CV <= 1		
	STABLE		

Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = RE103D2

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/11/2014	750	6.620073207	
2	6/11/2014	670	6.507277712	
3	9/23/2014	1300	7.170119543	
4	12/10/2014	930	6.835184586	
5	3/23/2015	940	6.845879875	
6	6/22/2015	770	6.646390515	
7	9/30/2015	830	6.721425701	
8	12/14/2015	620	6.429719478	
9	3/14/2016	860	6.756932389	
10	6/23/2016	890	6.791221463	
11				
12				
13				
14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	1.0	-0.00022	
Number of Rounds (n) =	10		
Average =	856.00		
Standard Deviation =	188.691		
Coefficient of Variation(CV)=	0.220		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	No Trend		
Trend \geq 90% Confidence Level	No Trend		

Stability Test, If No Trend Exists at 80% Confidence Level	CV \leq 1		
	STABLE		

Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = RE103D3

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/11/2014	430		430
2	6/11/2014	510		510
3	9/23/2014	460		460
4	12/10/2014	600		600
5	3/23/2015	570		570
6	6/22/2015	420		420
7	9/30/2015	470		470
8	12/14/2015	510		510
9	3/14/2016	520		520
10	6/23/2016	500		500
11				
12				
13				
14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	6.0	0.02524
Number of Rounds (n) =	10	
Average =	499.00	
Standard Deviation =	57.048	
Coefficient of Variation(CV)=	0.114	

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level

No Trend

Trend \geq 90% Confidence Level

No Trend

Stability Test, If No Trend Exists at
80% Confidence Level

CV \leq 1
STABLE

Data Entry By =

BAH

Date =

Jan 4 2017

Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = RE104D1

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/12/2014	150	5.01	
2	6/12/2014	160	5.08	
3	9/24/2014	140	4.94	
4	12/11/2014	140	4.94	
5	3/23/2015	110	4.70	
6	6/23/2015	100	4.61	
7	9/25/2015	110	4.70	
8	12/15/2015	110	4.70	
9	3/15/2016	100	4.61	
10	6/21/2016	92	4.52	
11				
12				
13				
14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	-34.0	-0.00064	
Number of Rounds (n) =	10		
Average =	121.20		
Standard Deviation =	23.967		
Coefficient of Variation(CV)=	0.198		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	DECREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = RE104D2

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/12/2014	2.6		2.6
2	6/12/2014	1.8		1.8
3	9/24/2014	2.3		2.3
4	12/11/2014	3.4		3.4
5	3/23/2015	3		3
6	6/23/2015	4.3		4.3
7	9/23/2015	4.2		4.2
8	12/15/2015	6.8		6.8
9	3/15/2016	8.4		8.4
10	6/21/2016	9		9
11				
12				
13				
14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	37.0	0.00853
Number of Rounds (n) =	10	
Average =	4.58	
Standard Deviation =	2.582	
Coefficient of Variation(CV)=	0.564	

Error Check, Blank if No Errors Detected

Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	INCREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By = BAH **Date =** Jan 4 2017

**Not Tested, Non-Detect Values:
RE104D3**

Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = RE105D1

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/11/2014	160	5.08	
2	6/11/2014	130	4.87	
3	9/26/2014	92	4.52	
4	12/11/2014	120	4.79	
5	3/25/2015	120	4.79	
6	6/23/2015	120	4.79	
7	9/28/2015	94	4.54	
8	12/17/2015	120	4.79	
9	3/17/2016	130	4.87	
10	6/27/2016	110	4.70	
11				
12				
13				
14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	-10.0	-0.00019	
Number of Rounds (n) =	10		
Average =	119.60		
Standard Deviation =	19.317		
Coefficient of Variation(CV)=	0.162		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	No Trend		
Trend \geq 90% Confidence Level	No Trend		

Stability Test, If No Trend Exists at 80% Confidence Level	CV \leq 1		
	STABLE		

Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage **Well Number = RE105D2**

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/11/2014	620		620
2	6/11/2014	1500		1500
3	9/26/2014	1500		1500
4	12/11/2014	1700		1700
5	3/25/2015	1600		1600
6	6/23/2015	1400		1400
7	9/28/2015	1900		1900
8	12/17/2015	1800		1800
9	3/17/2016	1800		1800
10	6/27/2016	1800		1800
11				
12				
13				
14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	25.0	0.96046
Number of Rounds (n) =	10	
Average =	1562.00	
Standard Deviation =	369.077	
Coefficient of Variation(CV)=	0.236	

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	INCREASING		
Trend \geq 90% Confidence Level	INCREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage **Well Number = RE108D1**

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/12/2014	130	4.86753445	
2	6/10/2014	82	4.406719247	
3	9/24/2014	140	4.941642423	
4	12/12/2014	140	4.941642423	
5	3/27/2015	140	4.941642423	
6	6/24/2015	110	4.700480366	
7	9/28/2015	98	4.584967479	
8	12/22/2015	110	4.700480366	
9	3/14/2016	120	4.787491743	
10	6/27/2016	82	4.406719247	
11				
12				
13				
14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	-12.0	-0.00026	
Number of Rounds (n) =	10		
Average =	115.20		
Standard Deviation =	22.710		
Coefficient of Variation(CV)=	0.197		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	No Trend		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage **Well Number =** RE108D2

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/12/2014	4600	8.43	
2	6/10/2014	3400	8.13	
3	9/24/2014	3700	8.22	
4	12/12/2014	3100	8.04	
5	3/27/2015	3300	8.10	
6	6/24/2015	3900	8.27	
7	9/28/2015	3400	8.13	
8	12/22/2015	2900	7.97	
9	3/14/2016	3800	8.24	
10	6/27/2016	3000	8.01	
11				
12				
13				
14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	-14.0	-0.00025	
Number of Rounds (n) =	10		
Average =	3510.00		
Standard Deviation =	508.702		
Coefficient of Variation(CV)=	0.145		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	No Trend		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = TT101D

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/13/2014	52		52
2	5/27/2014	57		57
3	9/25/2014	66		66
4	12/9/2014	67		67
5	3/24/2015	61		61
6	5/21/2015	68		68
7	6/22/2015	66		66
8	9/29/2015	67		67
9	12/17/2015	74		74
10	3/16/2016	67		67
11	6/21/2016	73		73
12				
13				
14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	35.0	0.01998
Number of Rounds (n) =	11	
Average =	65.27	
Standard Deviation =	6.451	
Coefficient of Variation(CV)=	0.099	

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	INCREASING		
Trend \geq 90% Confidence Level	INCREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage **Well Number =** TT101D1

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/13/2014	170		170
2	5/27/2014	93		93
3	9/25/2014	160		160
4	12/9/2014	160		160
5	3/24/2015	170		170
6	5/21/2015	170		170
7	6/22/2015	180		180
8	9/29/2015	170		170
9	12/17/2015	200		200
10	3/16/2016	180		180
11	6/21/2016	190		190
12				
13				
14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	35.0	0.06869
Number of Rounds (n) =	11	
Average =	167.55	
Standard Deviation =	27.500	
Coefficient of Variation(CV)=	0.164	

Error Check, Blank if No Errors Detected

Trend ≥ 80% Confidence Level	INCREASING		
Trend ≥ 90% Confidence Level	INCREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By = BAH **Date =** Jan 4 2017

Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage **Well Number =** TT101D2

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/13/2014	250		250
2	5/27/2014	300		300
3	9/25/2014	560		560
4	12/9/2014	520		520
5	3/24/2015	480		480
6	5/21/2015	620		620
7	6/22/2015	620		620
8	9/29/2015	640		640
9	12/17/2015	510		510
10	3/16/2016	590		590
11	6/21/2016	690		690
12				
13				
14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	32.0	0.41577
Number of Rounds (n) =	11	
Average =	525.45	
Standard Deviation =	138.735	
Coefficient of Variation(CV)=	0.264	

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	INCREASING		
Trend \geq 90% Confidence Level	INCREASING		

Stability Test, If No Trend Exists at 80% Confidence Level	NA		
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Data Entry By =	BAH	Date =	Jan 4 2017
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Not Tested, Non-Detect Values:

TT102D1

TT102D2

Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = RE120D1

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	12/12/2014	1300	7.170119543	
2	3/25/2015	1300	7.170119543	
3	9/29/2015	1300	7.170119543	
4	12/18/2015	1300	7.170119543	
5	3/16/2016	1200	7.090076836	
6	6/22/2016	1200	7.090076836	
7				
8				
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16				
17				
18				

Mann Kendall Statistic (S) =	-8.0	-0.00015	
Number of Rounds (n) =	6		
Average =	1266.67		
Standard Deviation =	51.640		
Coefficient of Variation(CV)=	0.041		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level DECREASING

Trend \geq 90% Confidence Level DECREASING

Stability Test, If No Trend Exists at 80% Confidence Level NA

Data Entry By =

BAH

Date =

Jan 4 2017

Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = RE120D2

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	12/12/2014	900	6.802394763	
2	3/25/2015	830	6.721425701	
3	9/29/2015	760	6.633318433	
4	12/29/2015	680	6.522092798	
5	3/16/2016	780	6.65929392	
6	6/22/2016	720	6.579251212	
7				
8				
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16				
17				
18				

Mann Kendall Statistic (S) =	-9.0	-0.00038	
Number of Rounds (n) =	6		
Average =	778.33		
Standard Deviation =	78.592		
Coefficient of Variation(CV)=	0.101		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	DECREASING		
Trend \geq 90% Confidence Level	DECREASING		
Stability Test, If No Trend Exists at 80% Confidence Level	NA		

Data Entry By = BAH Date = Jan 4 2017

Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = RE120D3

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	12/12/2014	3.4		3.4
2	3/25/2015	0.74		0.74
3	9/29/2015	120		120
4	12/29/2015	29		29
5	3/16/2016	55		55
6	6/22/2016	46		46
7				
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15				
16				
17				
18				

Mann Kendall Statistic (S) =	5.0		
Number of Rounds (n) =	6		
Average =	42.36		
Standard Deviation =	43.885		
Coefficient of Variation(CV)=	1.036		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	No Trend		
Trend \geq 90% Confidence Level	No Trend		

Stability Test, If No Trend Exists at 80% Confidence Level	CV > 1		
	NON-STABLE		

Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = RE122D1

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/24/2015	570		570
2	9/30/2015	600		600
3	12/15/2015	600		600
4	3/15/2016	610		610
5	6/22/2016	610		610
6				
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15				
16				
17				
18				

Mann Kendall Statistic (S) =	8.0	0.08878
Number of Rounds (n) =	5	
Average =	598.00	
Standard Deviation =	16.432	
Coefficient of Variation(CV)=	0.027	

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	INCREASING	
Trend \geq 90% Confidence Level	INCREASING	

Stability Test, If No Trend Exists at 80% Confidence Level	NA	
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = RE122D2

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/24/2015	4600		4600
2	9/30/2015	5200		5200
3	12/15/2015	4700		4700
4	3/15/2016	5300		5300
5	6/22/2016	5500		5500
6				
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14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	8.0	1.80712
Number of Rounds (n) =	5	
Average =	5060.00	
Standard Deviation =	391.152	
Coefficient of Variation(CV)=	0.077	

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	INCREASING	
Trend \geq 90% Confidence Level	INCREASING	

Stability Test, If No Trend Exists at 80% Confidence Level	NA	
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage	Well Number = RE122D3
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Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	3/24/2015	6.8	1.916922612	
2	9/30/2015	10	2.302585093	
3	12/15/2015	2.5	0.916290732	
4	3/15/2016	2.1	0.741937345	
5	6/22/2016	7.4	2.00148	
6				
7				
8				
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14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	-2.0	-0.001173	
Number of Rounds (n) =	5		
Average =	5.76		
Standard Deviation =	3.383		
Coefficient of Variation(CV)=	0.587		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	No Trend		
Trend \geq 90% Confidence Level	No Trend		
Stability Test, If No Trend Exists at 80% Confidence Level	CV \leq 1 STABLE		

Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = RE123D1

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	9/29/2015	12	2.48490665	
2	12/21/2015	6.1	1.808288771	
3	3/17/2016	6.6	1.887069649	
4	6/20/2016	7.4	2.00148	
5				
6				
7				
8				
9				
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12				
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14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	0.0	-0.00150	
Number of Rounds (n) =	4		
Average =	8.03		
Standard Deviation =	2.704		
Coefficient of Variation(CV)=	0.337		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	No Trend	
Trend \geq 90% Confidence Level	No Trend	

Stability Test, If No Trend Exists at 80% Confidence Level	CV \leq 1	STABLE	
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Data Entry By =	BAH	Date =	Jan 4 2017
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Mann-Kendall Statistical Test and First Order Change Rate

Site Name : Bethpage

Well Number = RE123D2

Compound ->		TCE Concentration	LN TCE Decreasing Change Rate Calculation	Linear TCE Increasing Change Rate Calculation
Event Number	Sampling Date (most recent last)			
1	9/29/2015	1.4	0.336472237	
2	12/21/2015	1.5	0.405465108	
3	3/17/2016	1.9	0.641853886	
4	6/20/2016	1.5	0.405465108	
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

Mann Kendall Statistic (S) =	3.0	0.00048	#DIV/0!
Number of Rounds (n) =	4		
Average =	1.58		
Standard Deviation =	0.222		
Coefficient of Variation(CV)=	0.141		

Error Check, Blank if No Errors Detected

Trend \geq 80% Confidence Level	No Trend	
Trend \geq 90% Confidence Level	No Trend	

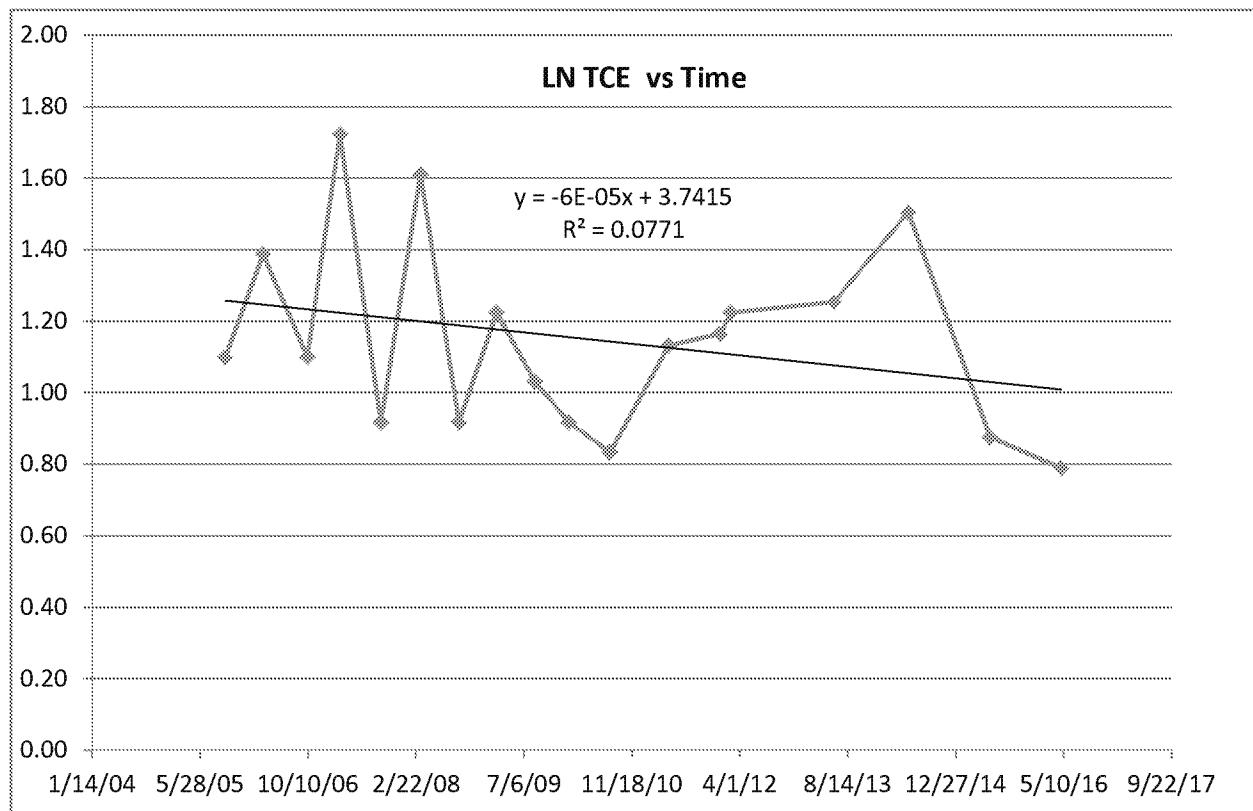
Stability Test, If No Trend Exists at 80% Confidence Level	CV \leq 1	STABLE	
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Data Entry By =	BAH	Date =	Jan 4 2017
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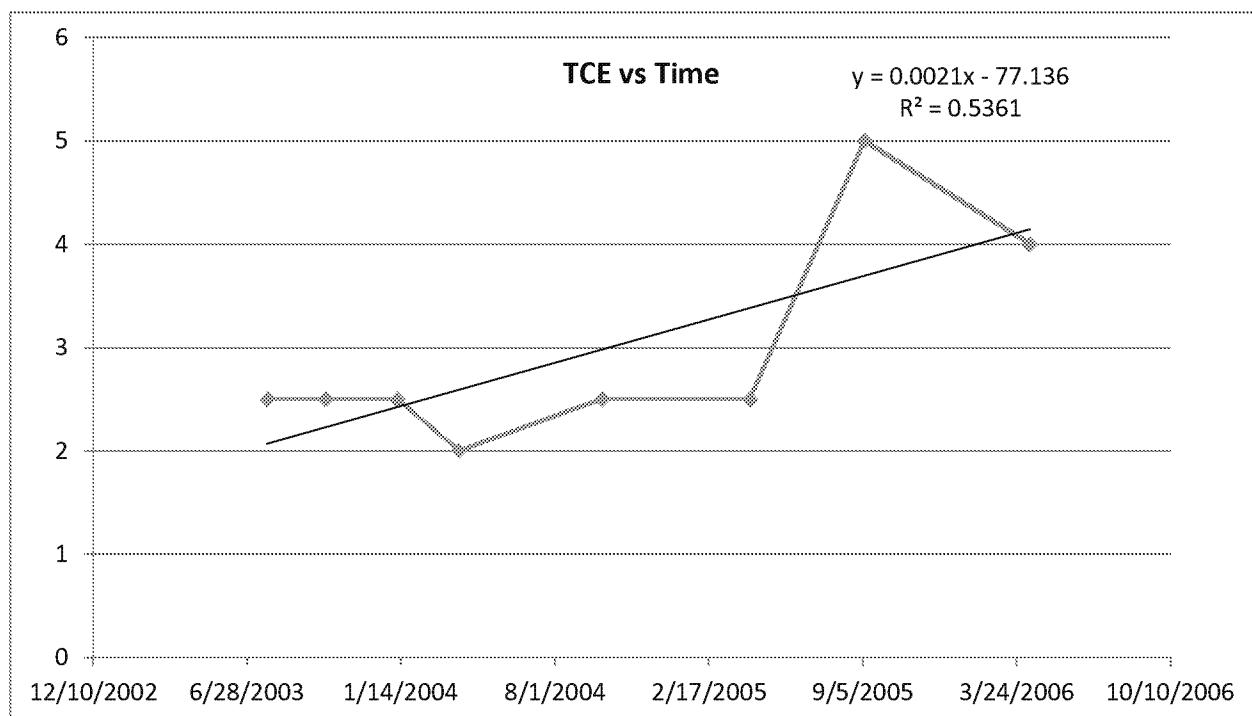
**Not Tested, Non-Detect Values:
RE123D3**

Appendix C
First Order Regression Lines

FW-03

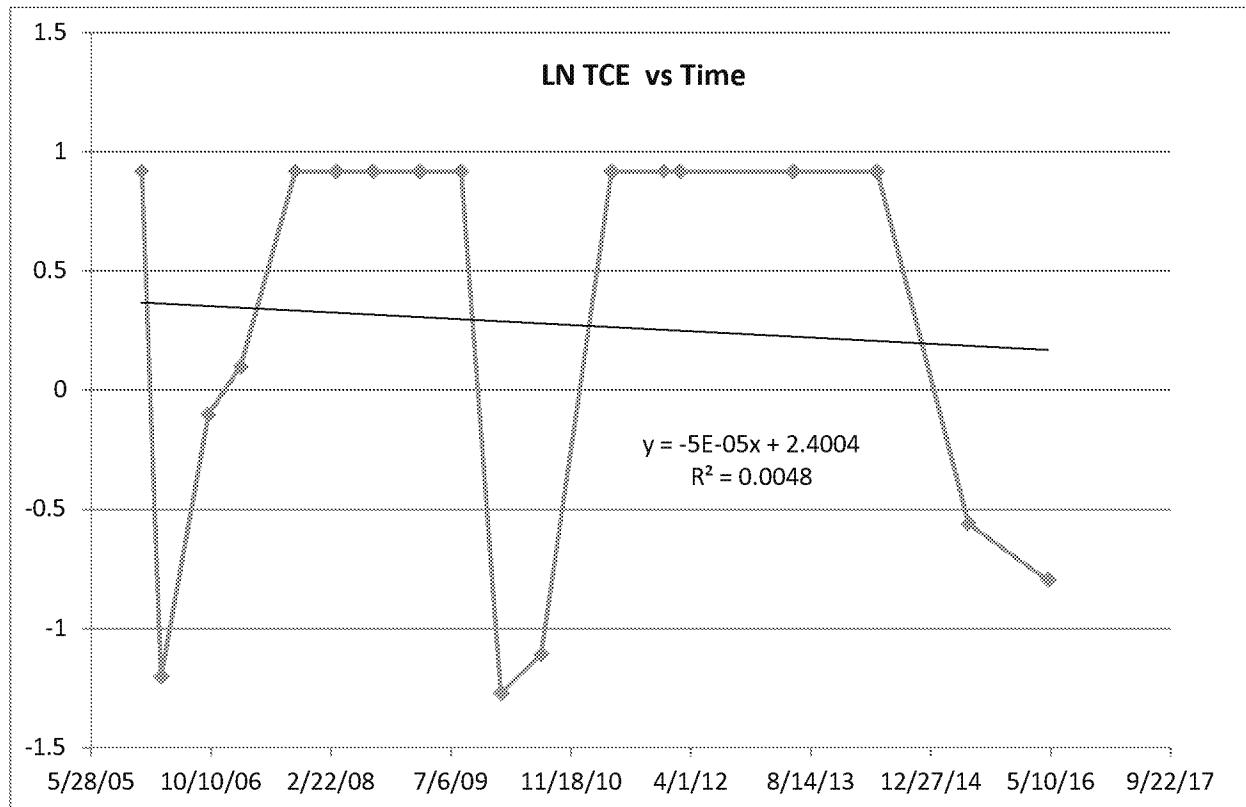


GM-16SR



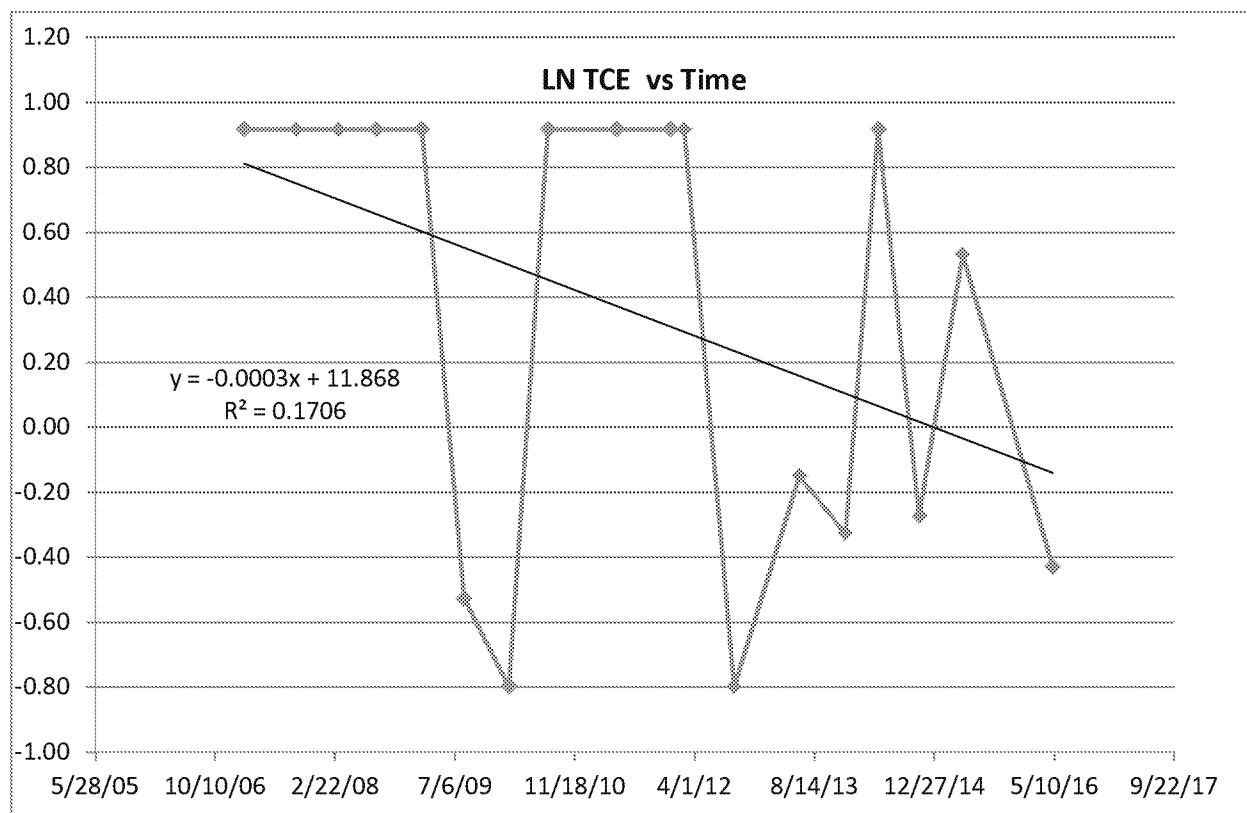
**Not Tested, Non-Detect Values:
GM-17SR**

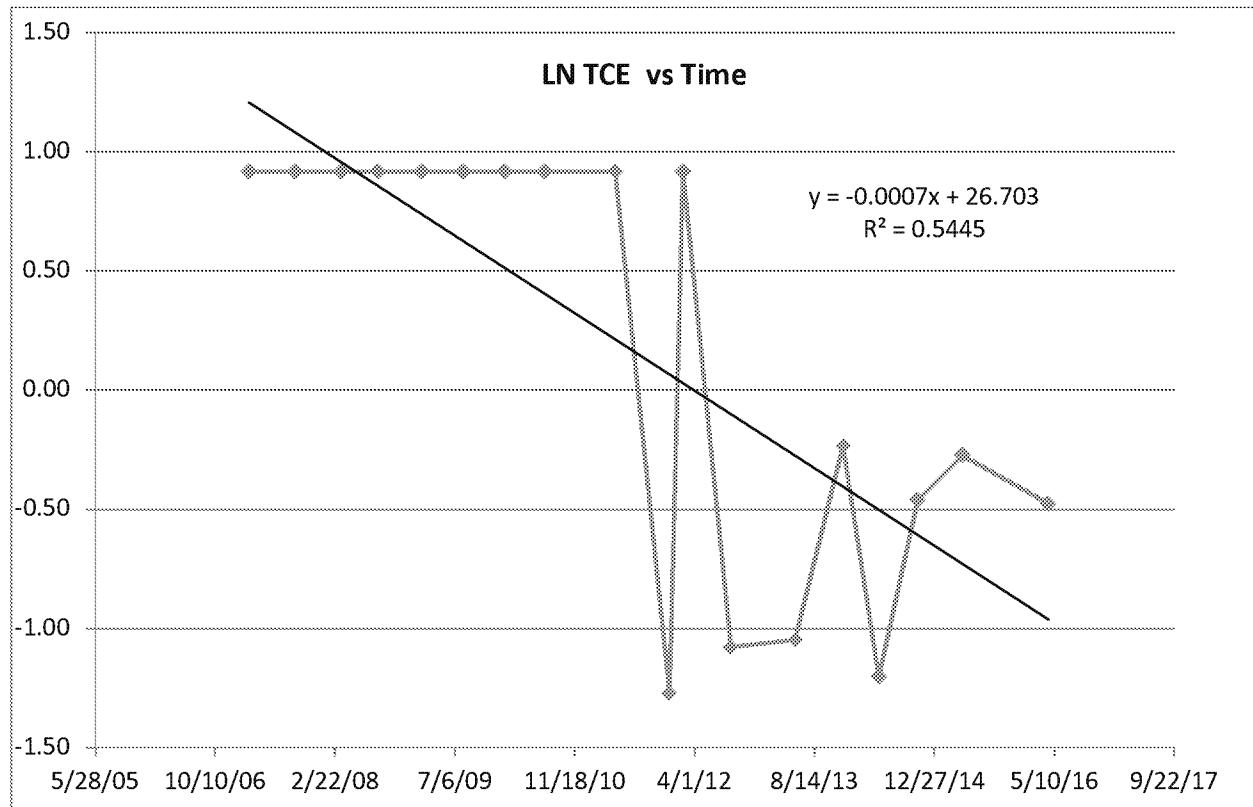
GM-78S



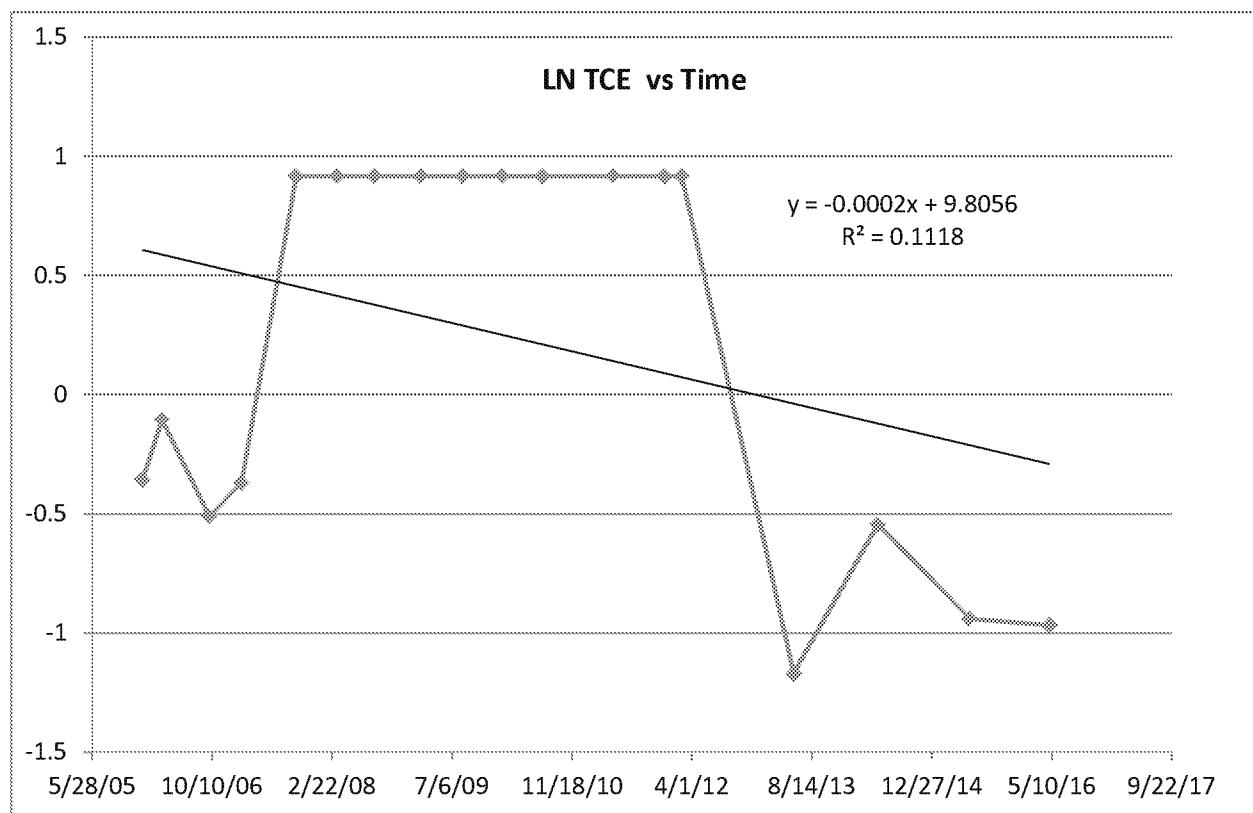
Not Tested, Non-Detect Values:
HN-40S
HN-42S

GM-17I

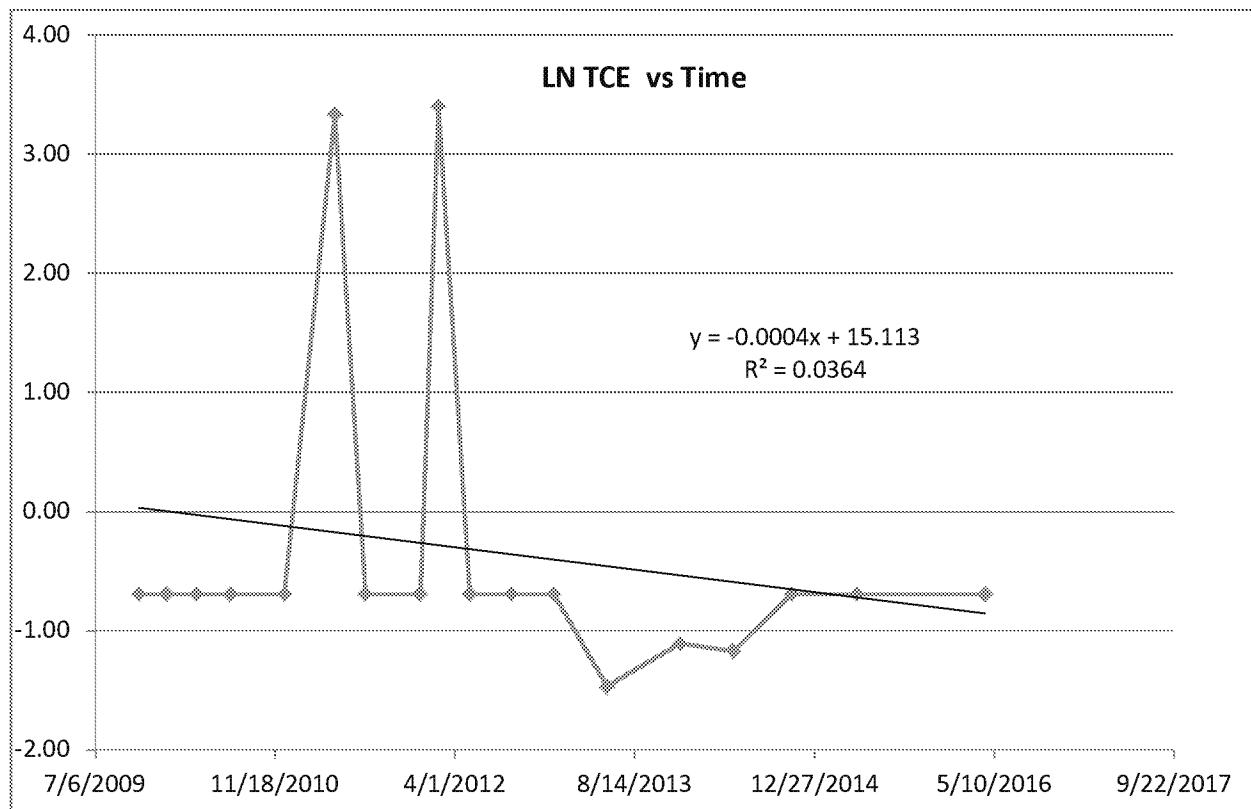


GM-74I

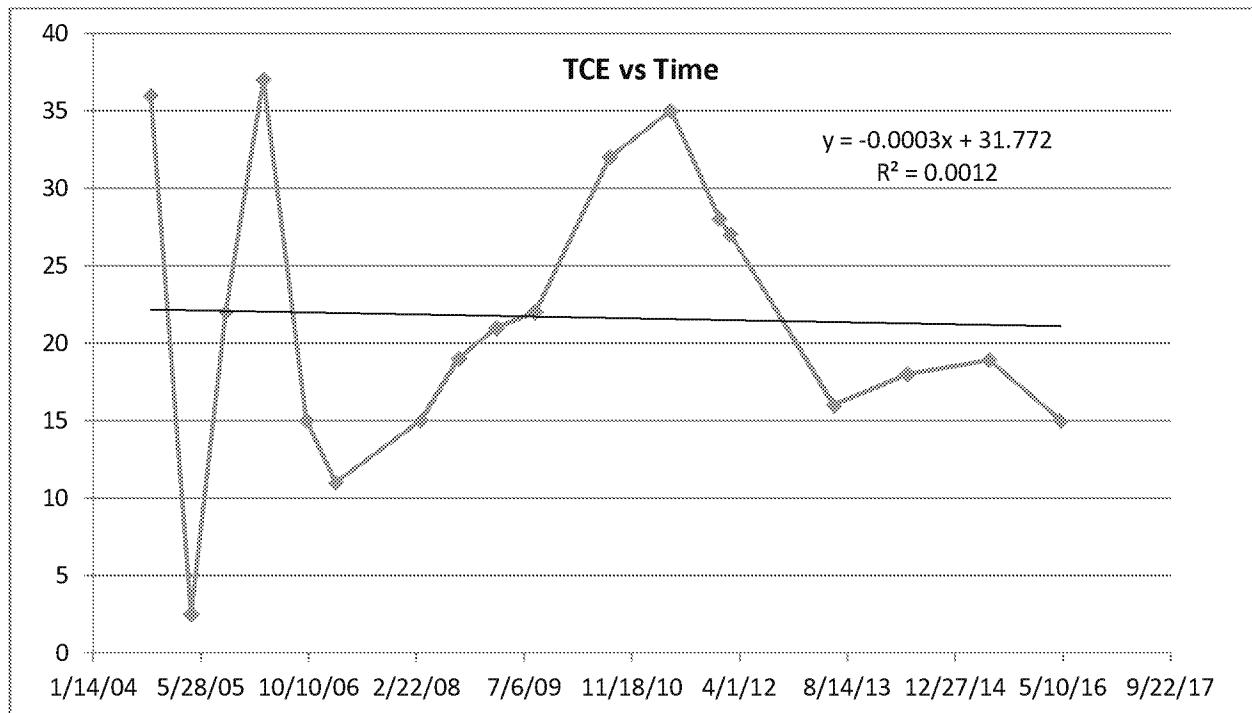
GM-78I



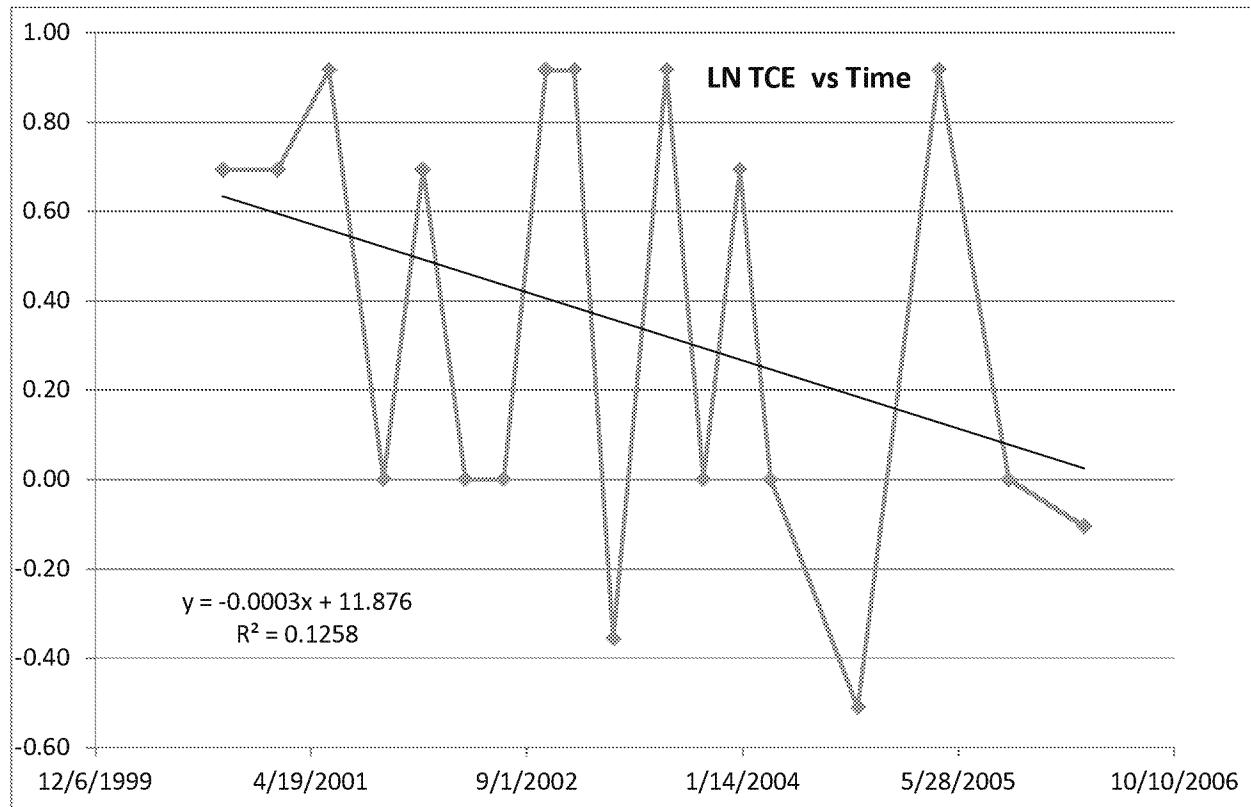
GM-79I



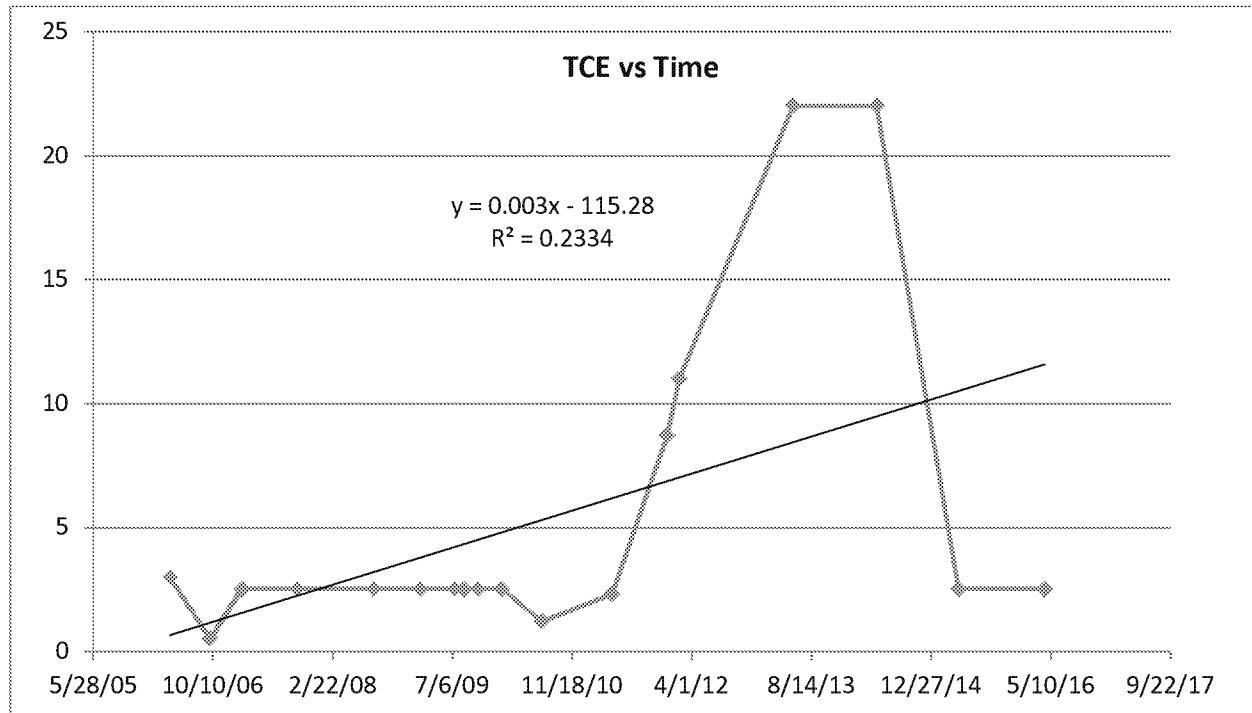
HN-24I



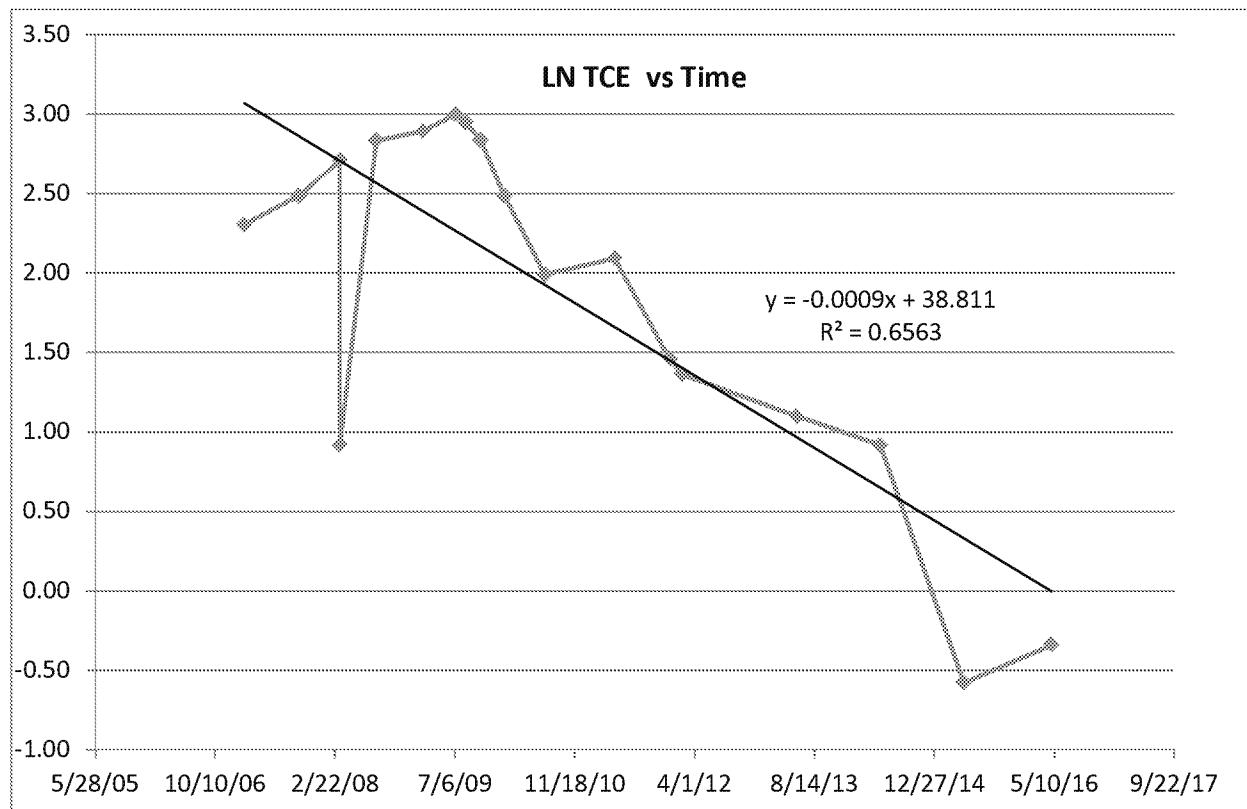
HN-29I



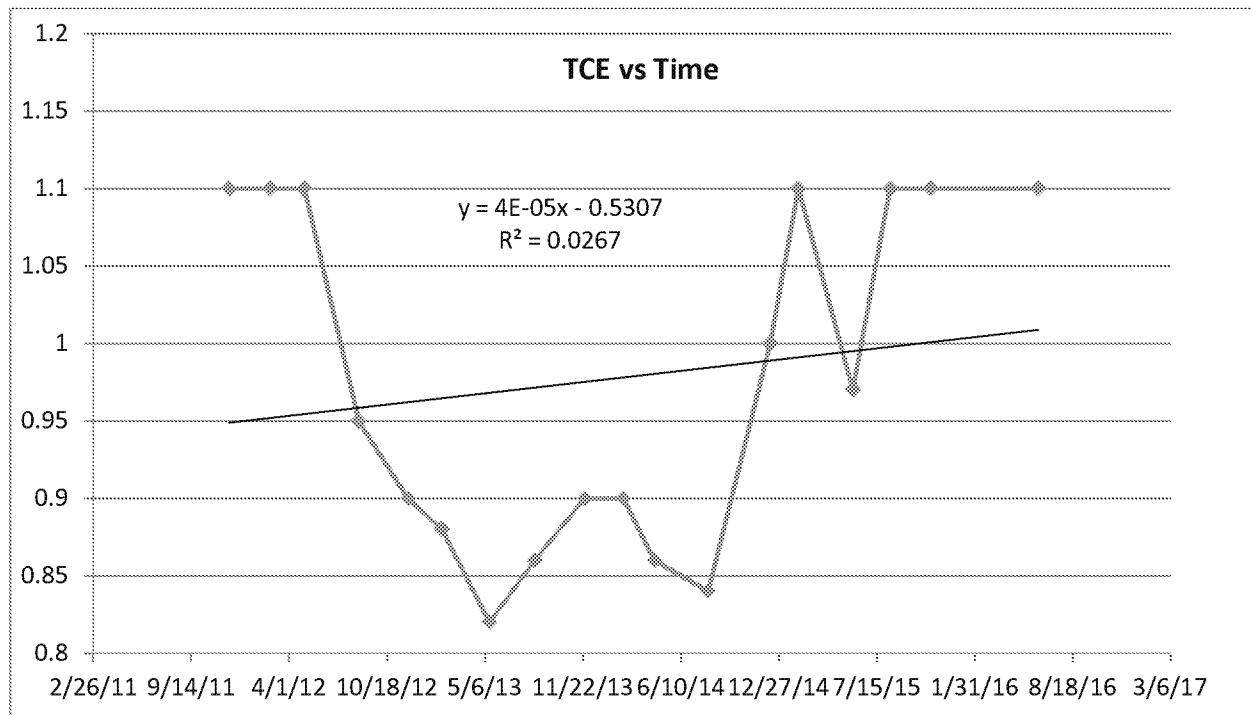
HN-40I



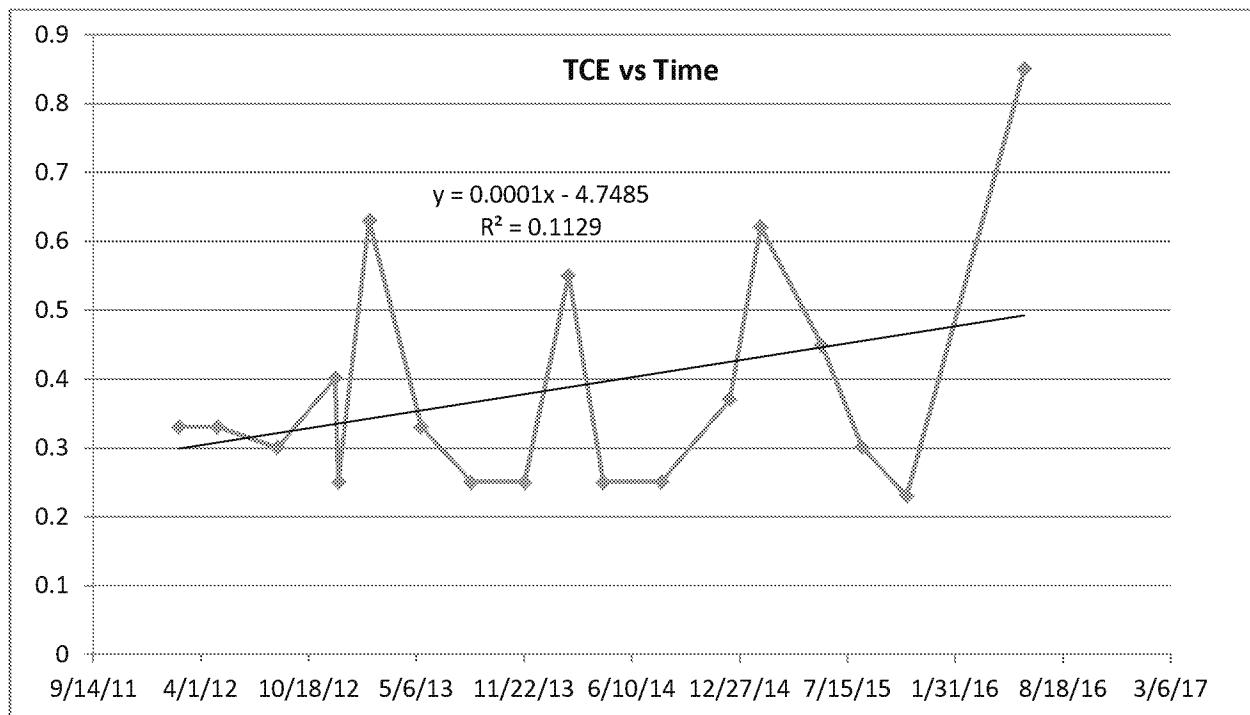
HN-42I



BPOW 1-1



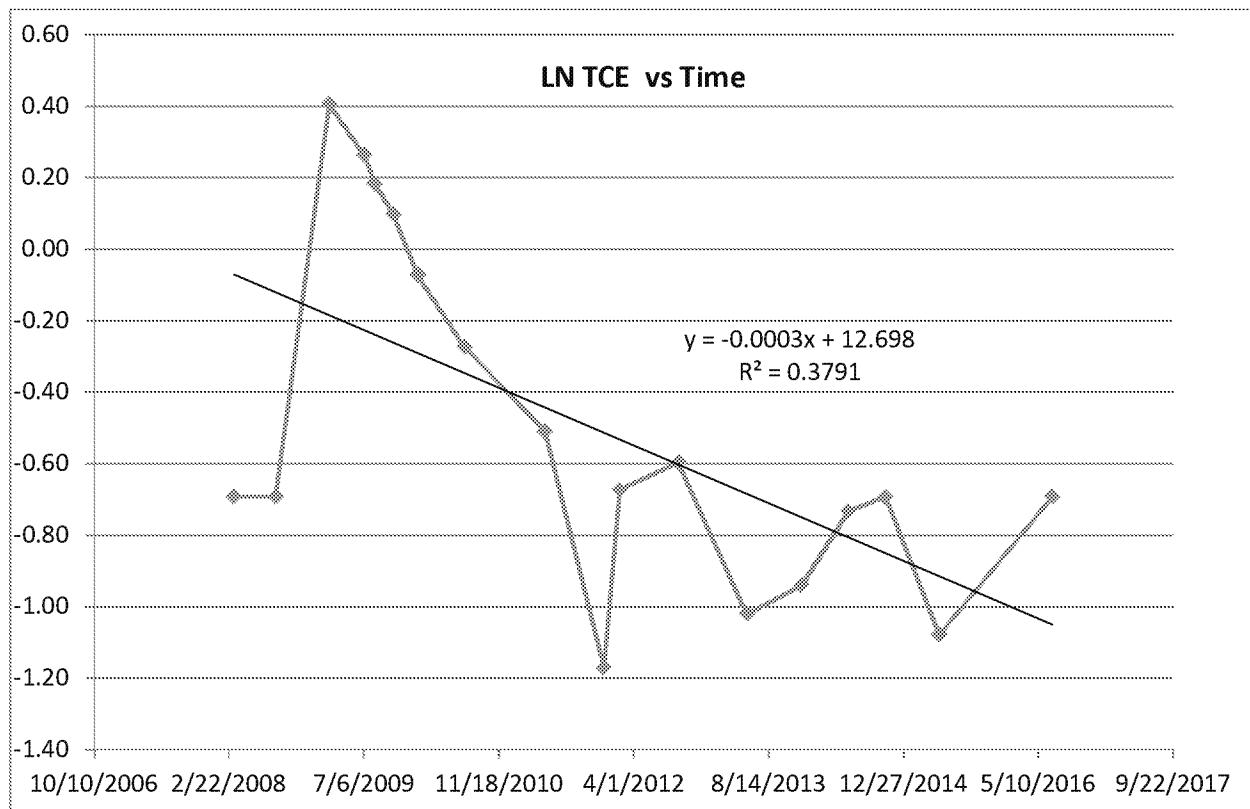
BPOW 1-2



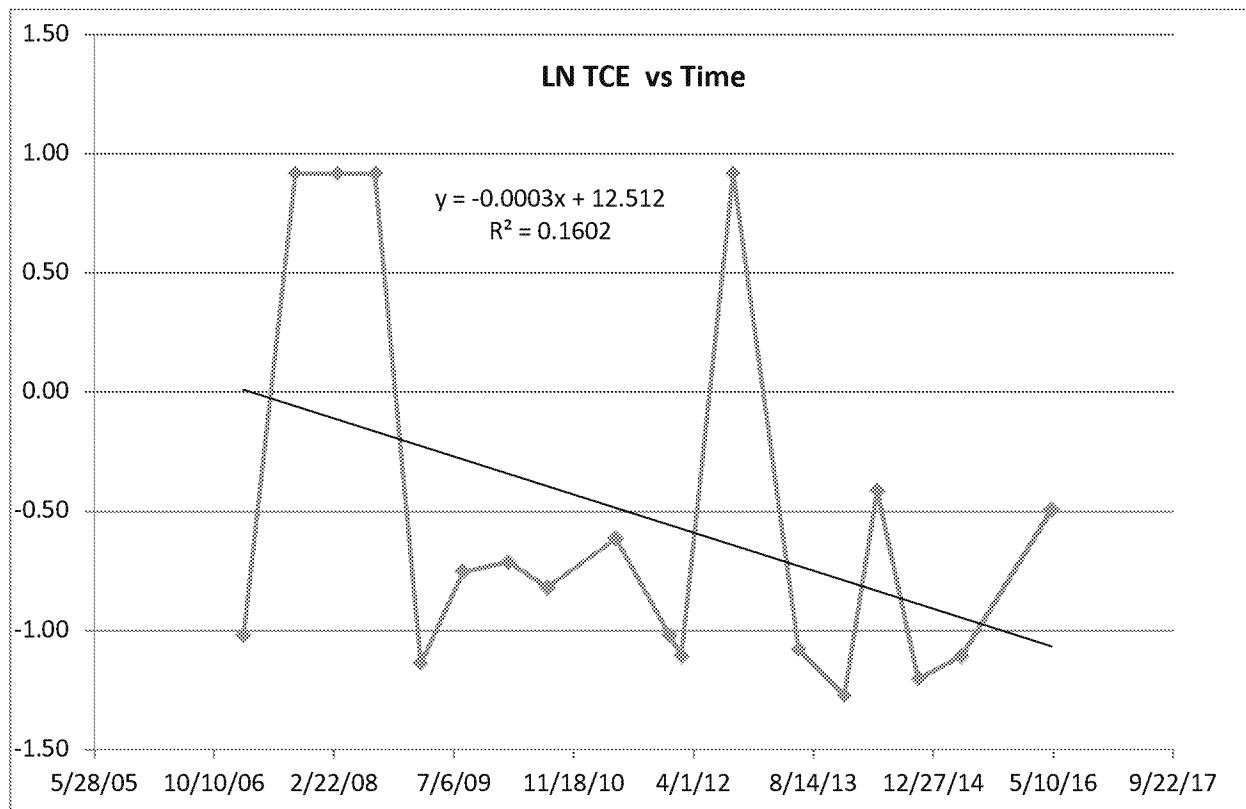
Not Tested, Non-Detect Values:

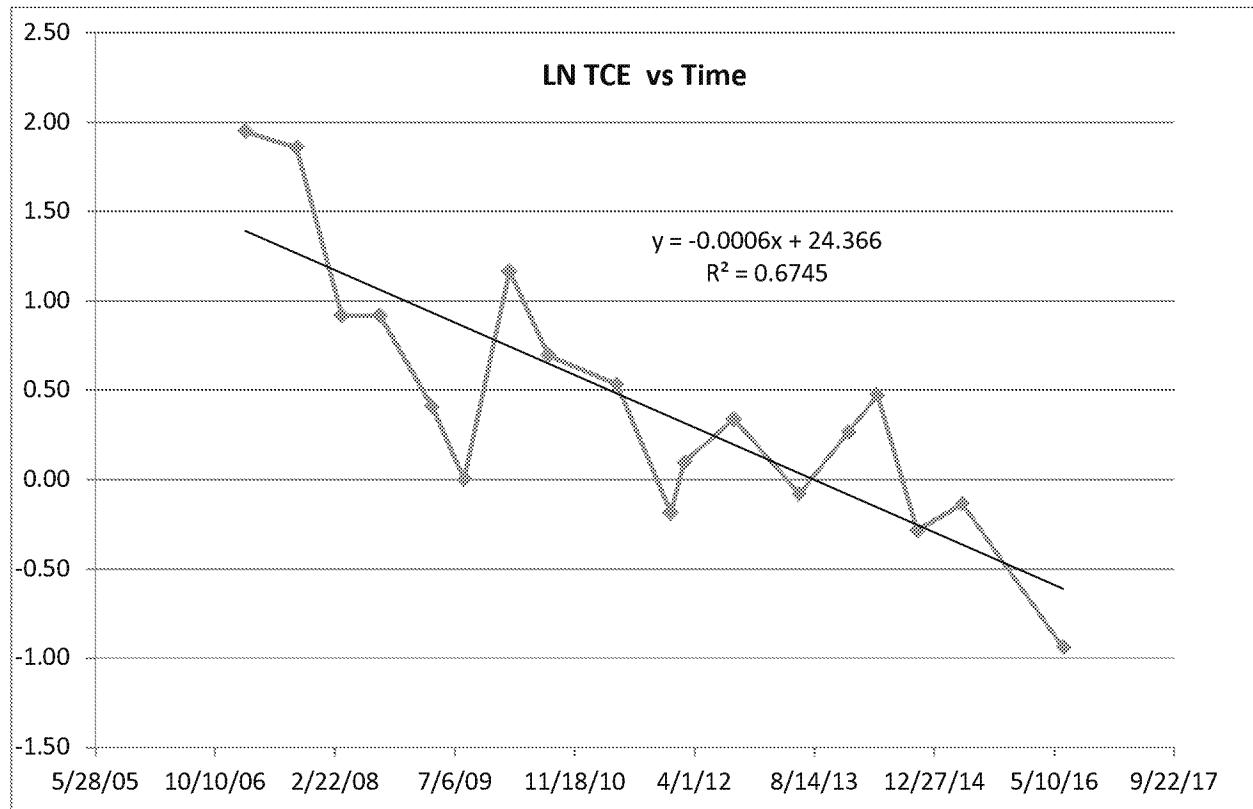
BPOW 1-3
BPOW 1-4
BPOW 1-5
BPOW 1-6

GM-15D

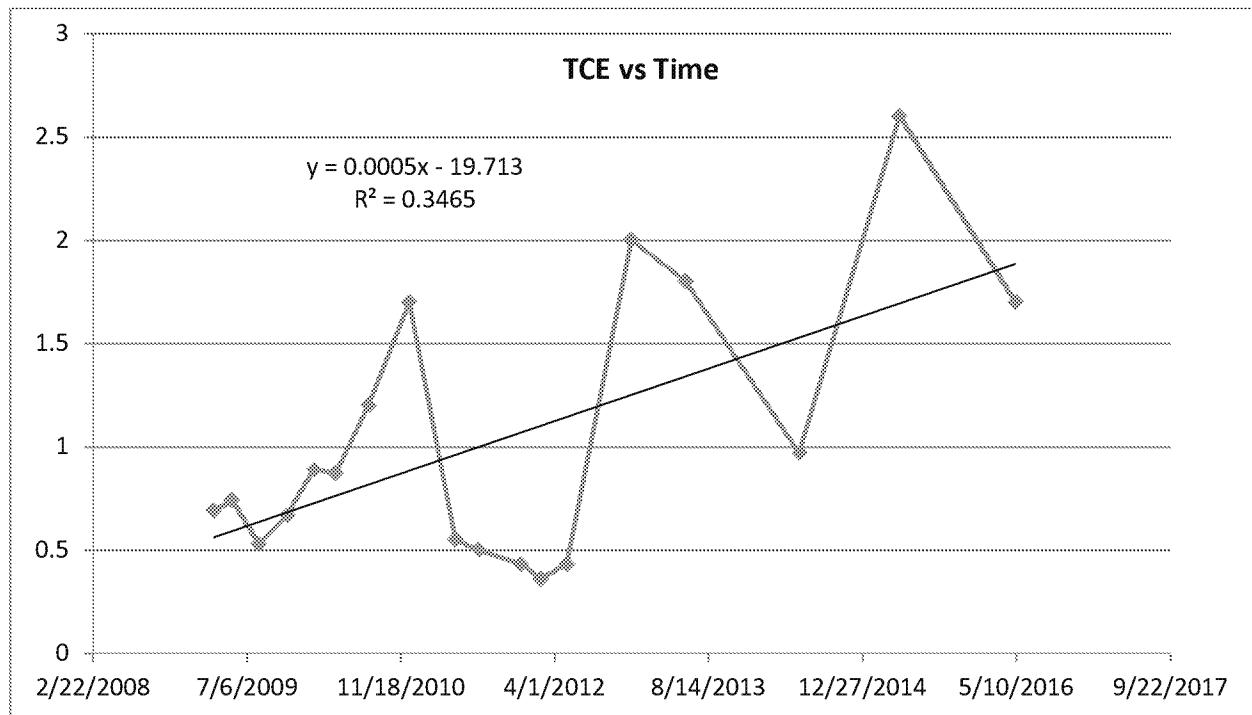


GM-17D

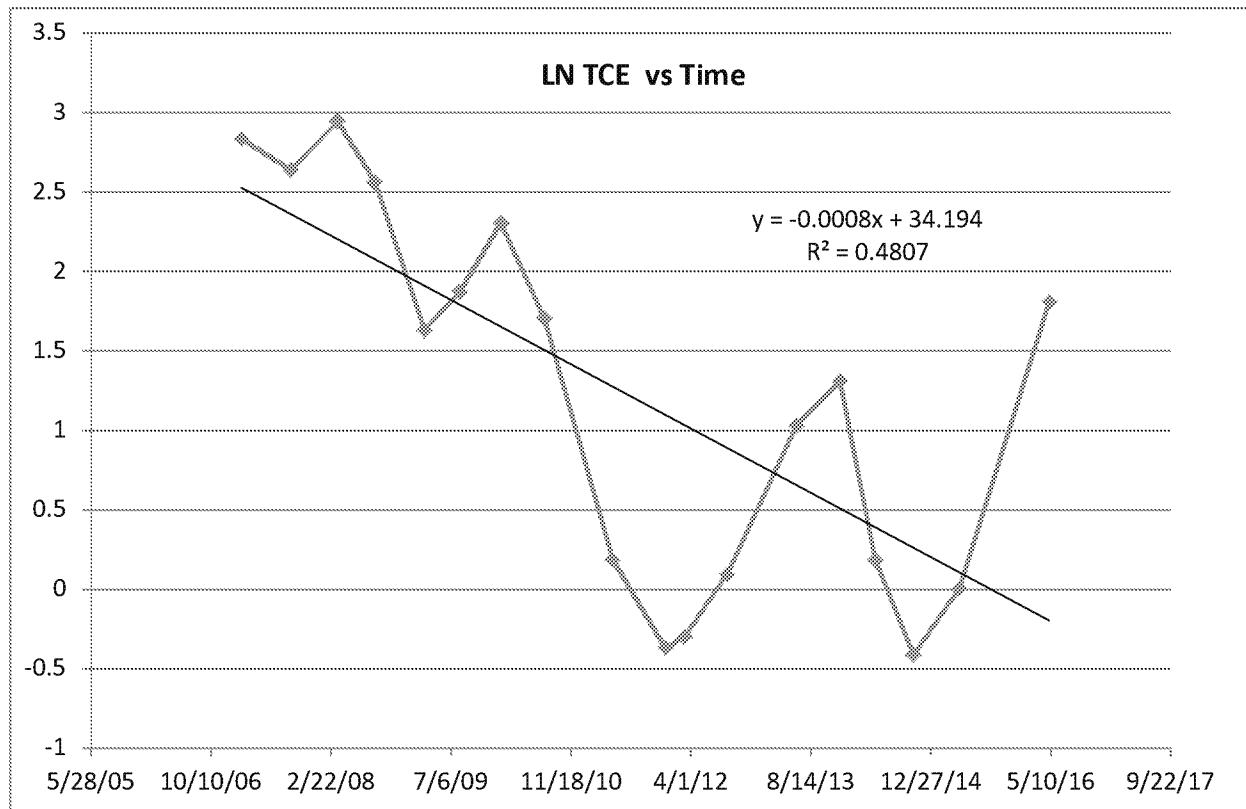


GM-18D

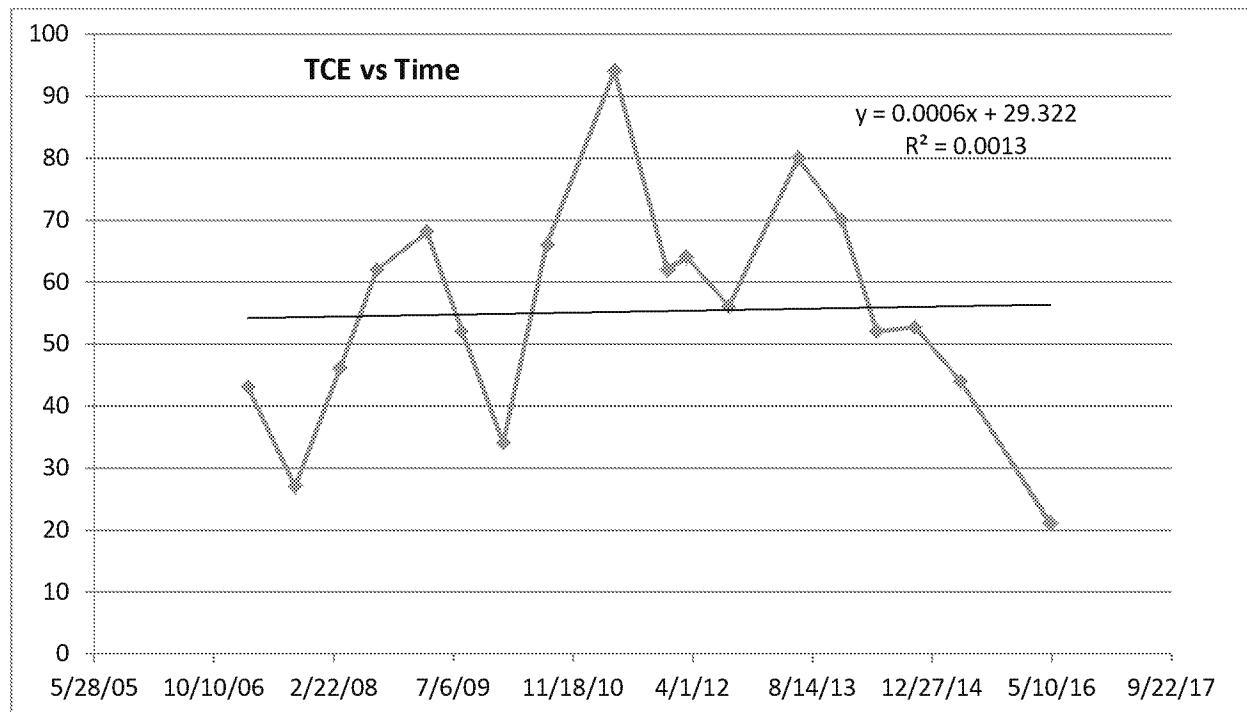
GM-21D



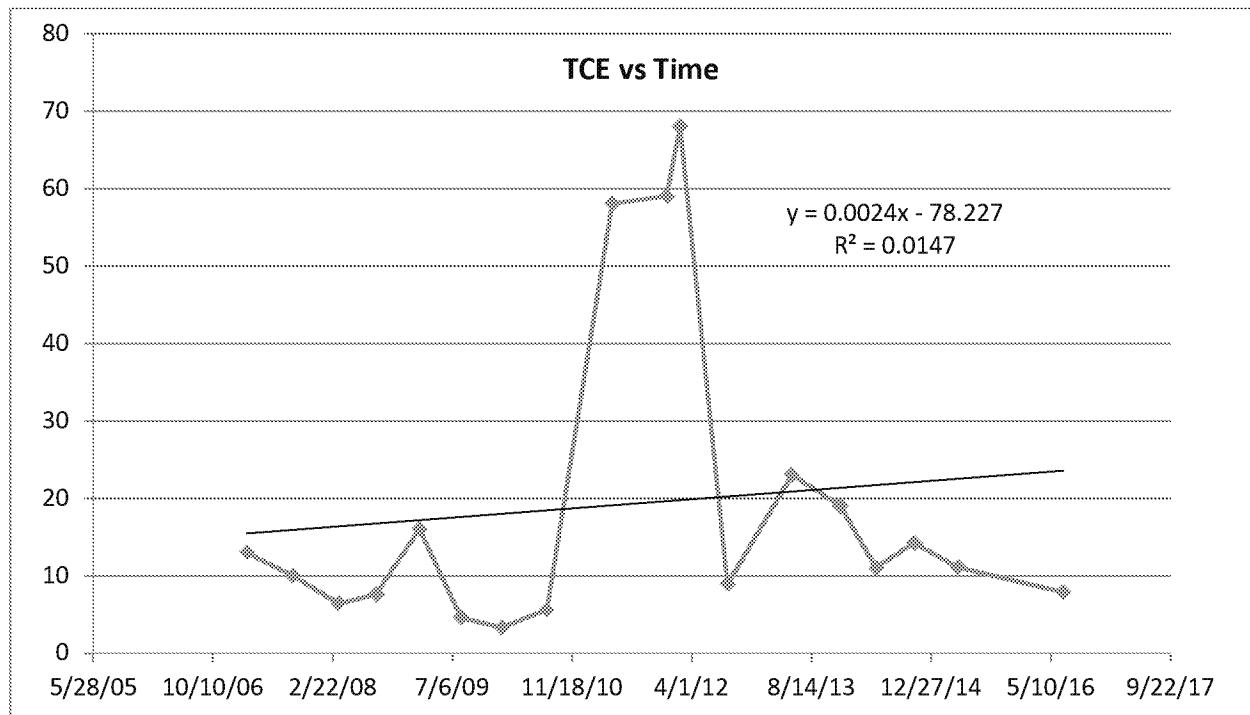
GM-39DA



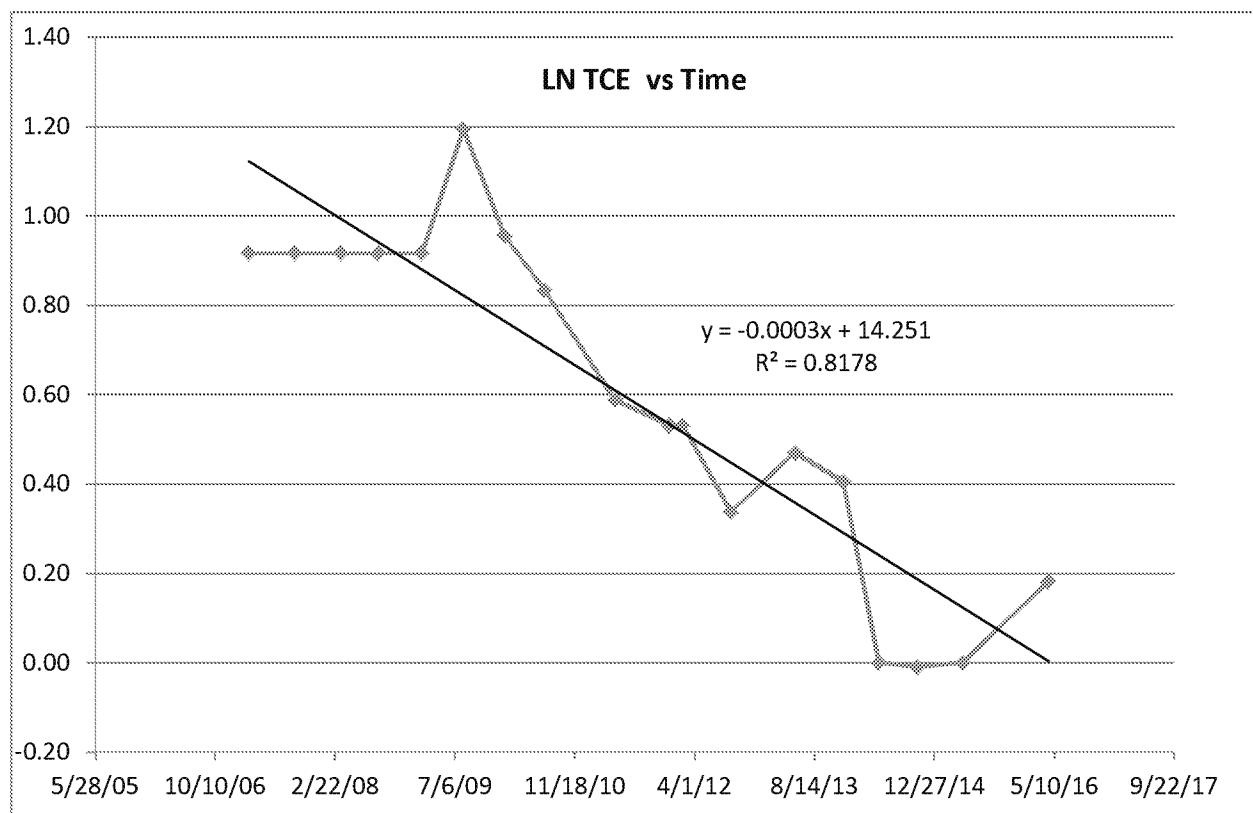
GM-39DB



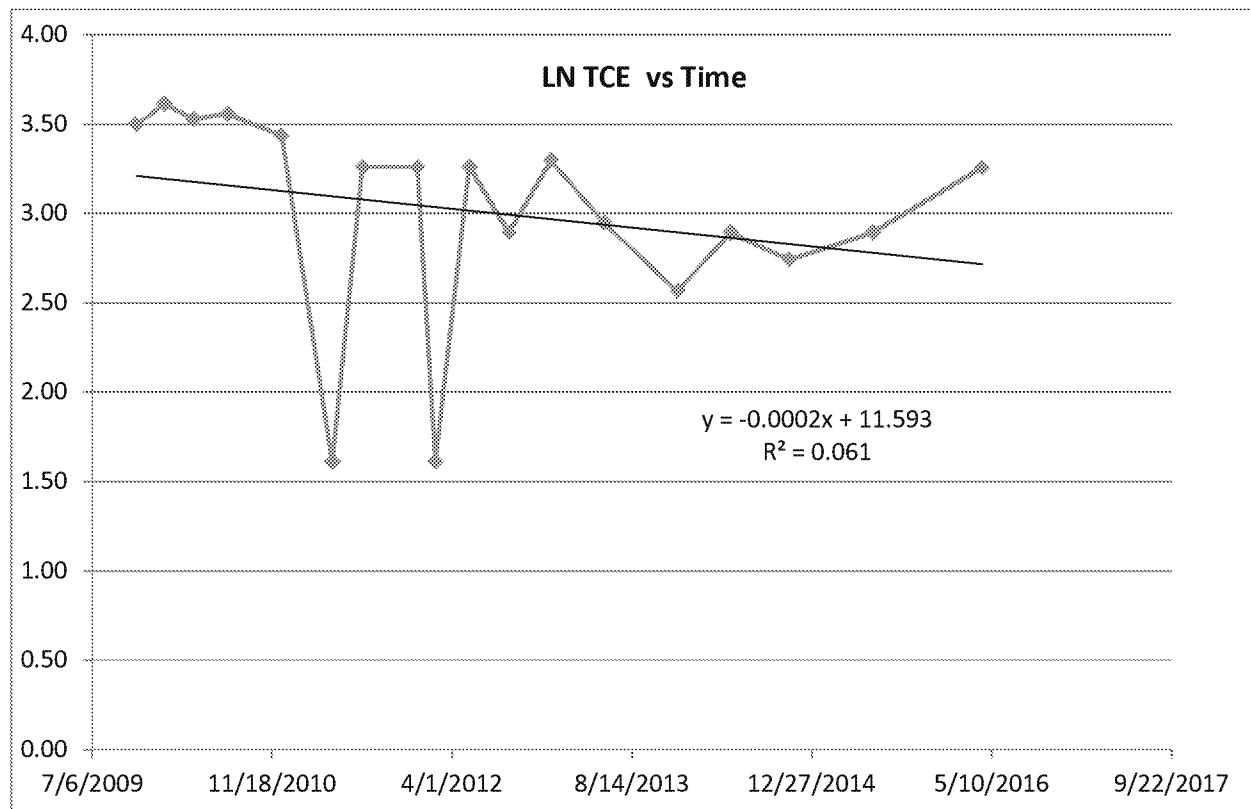
GM-73D



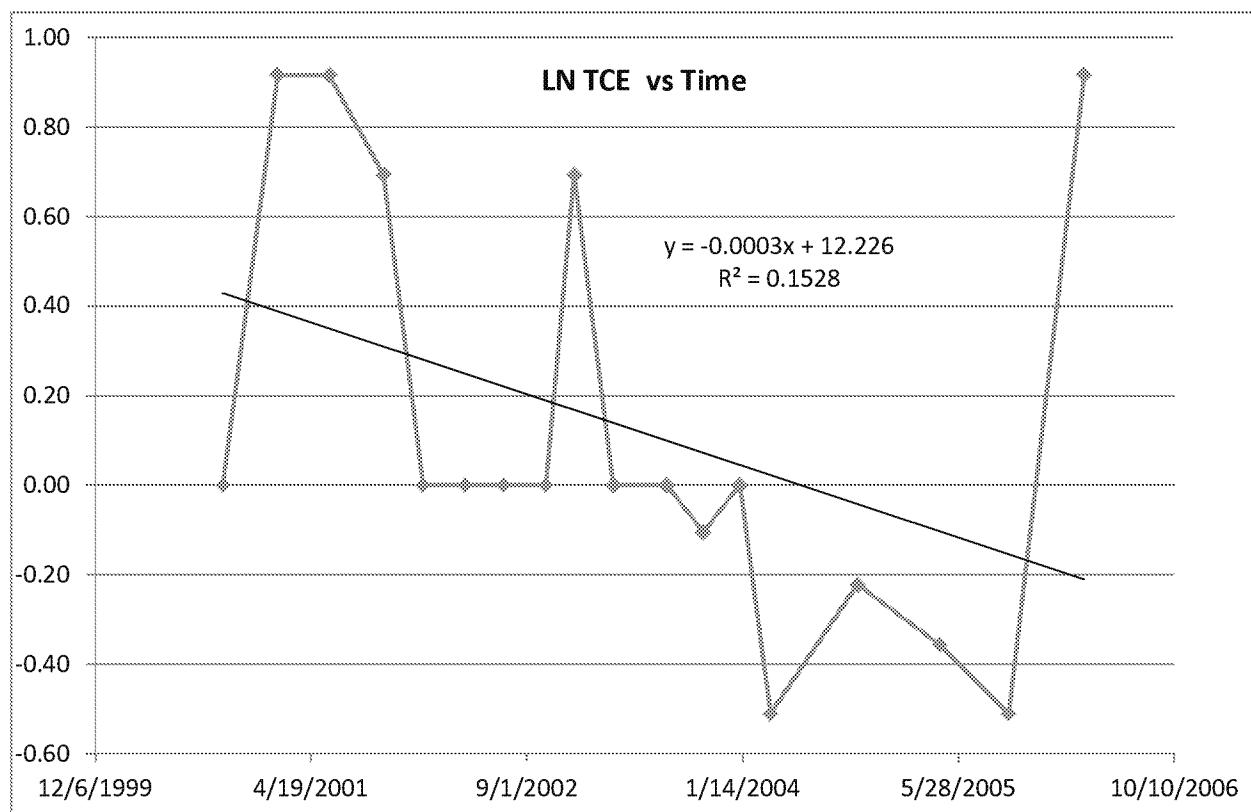
GM-74D



GM-79D



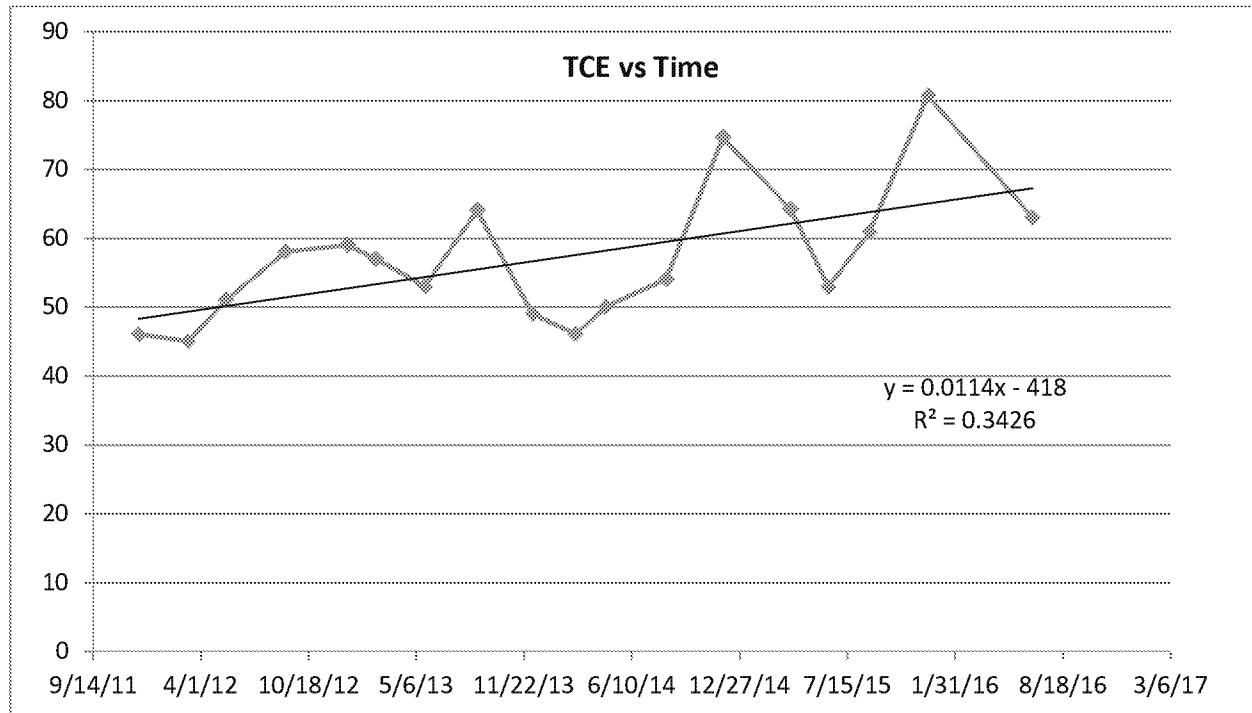
HN-29D



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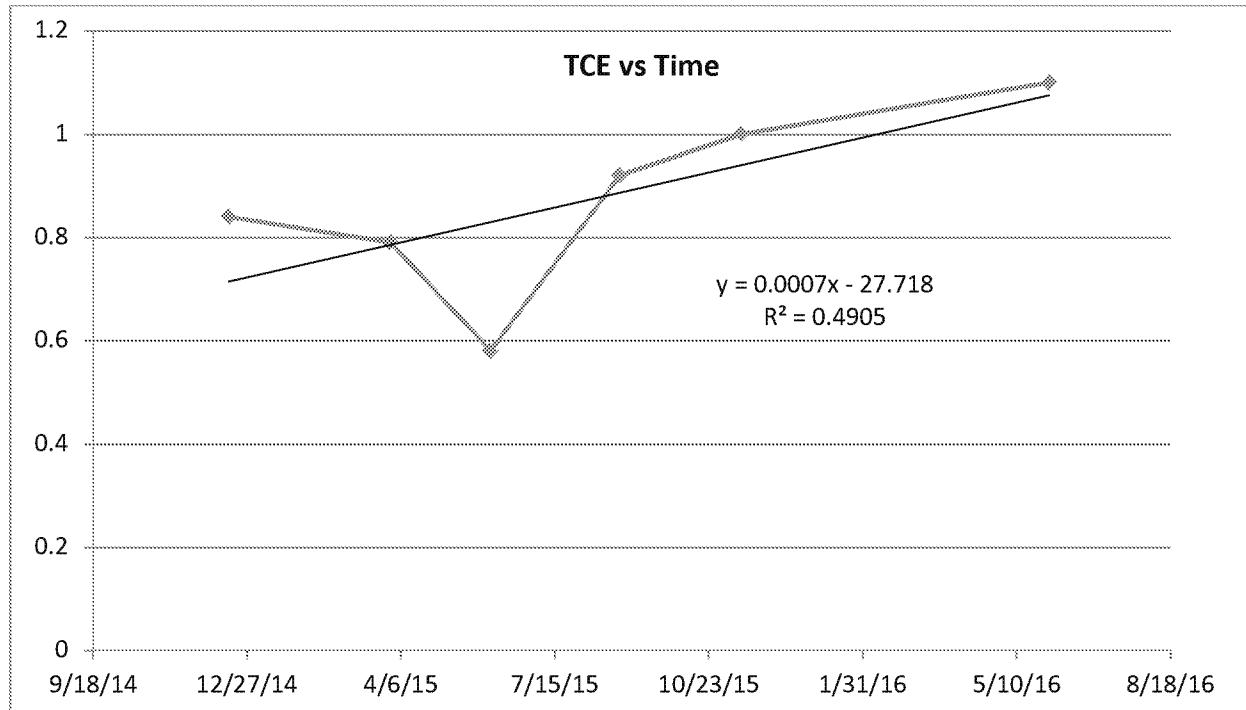
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BPOW 2-2
BPOW 2-3
BPOW 3-1
BPOW 3-2
BPOW 3-3

BPOW 3-4

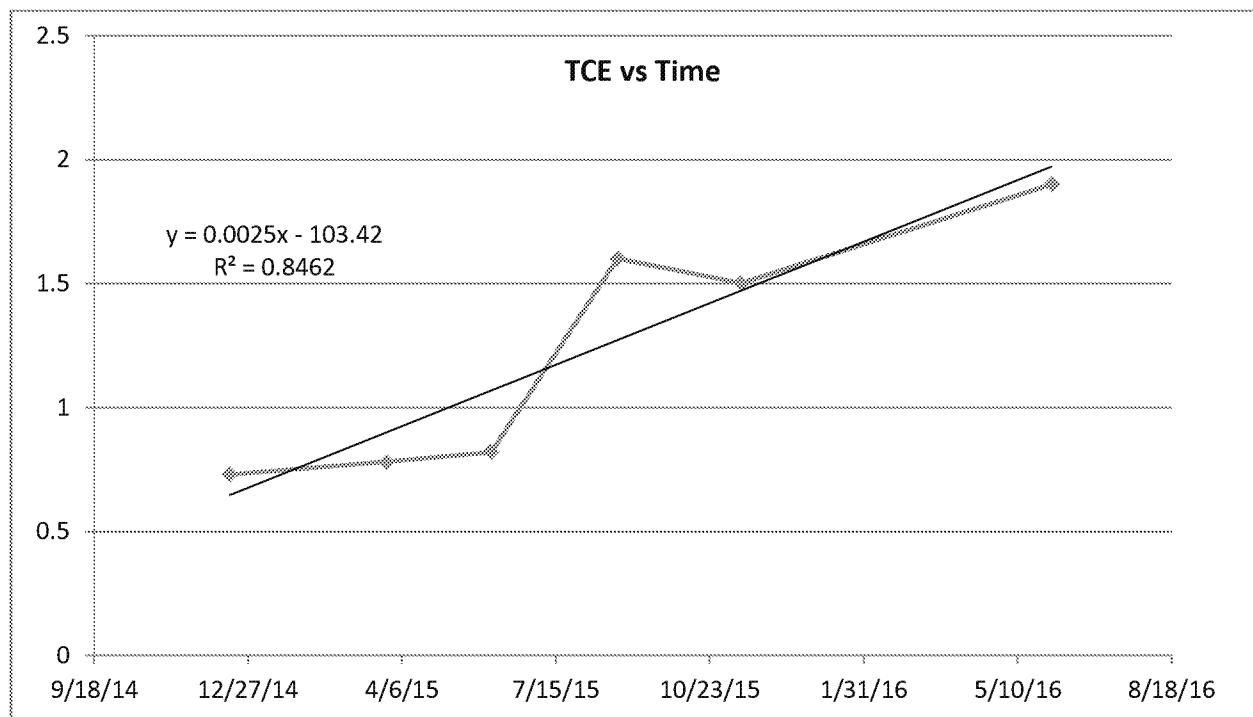


Not Tested, Non-Detect Values:
BPOW 4-1
BPOW 4-2

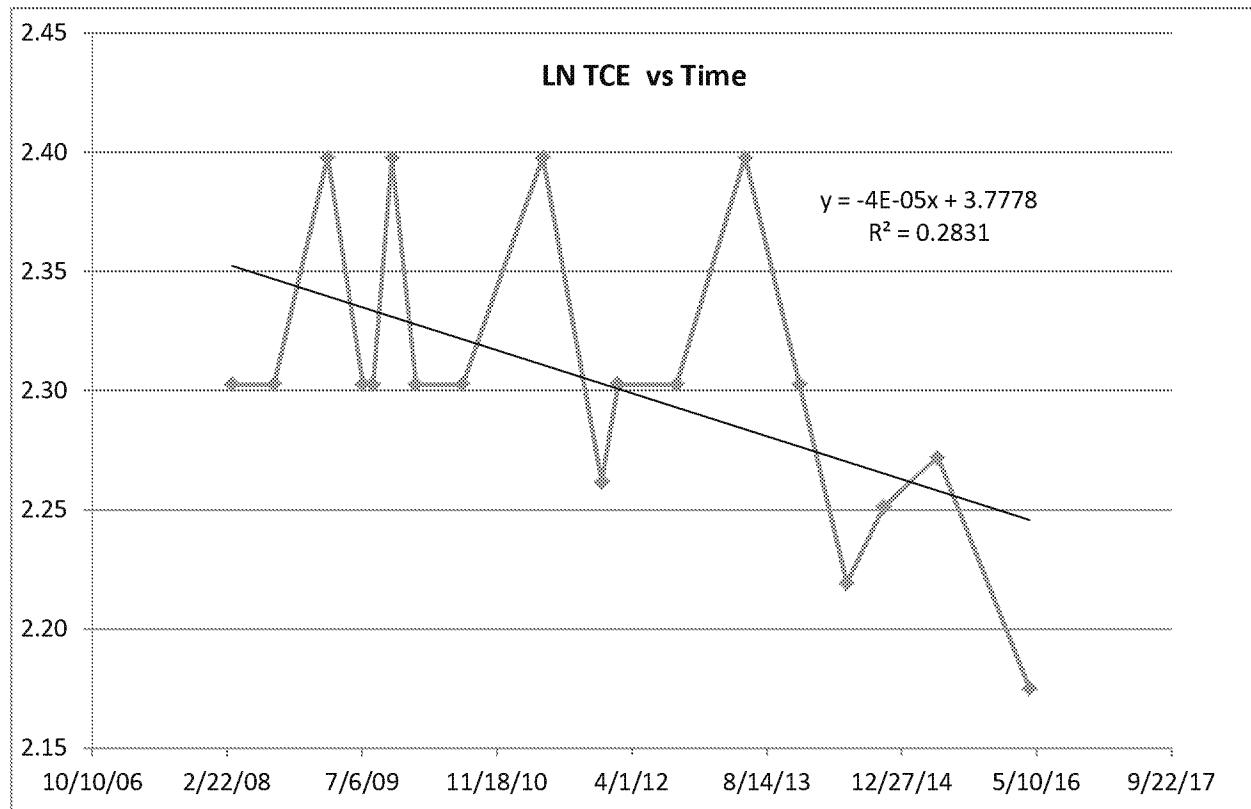
BPOW 4-1R



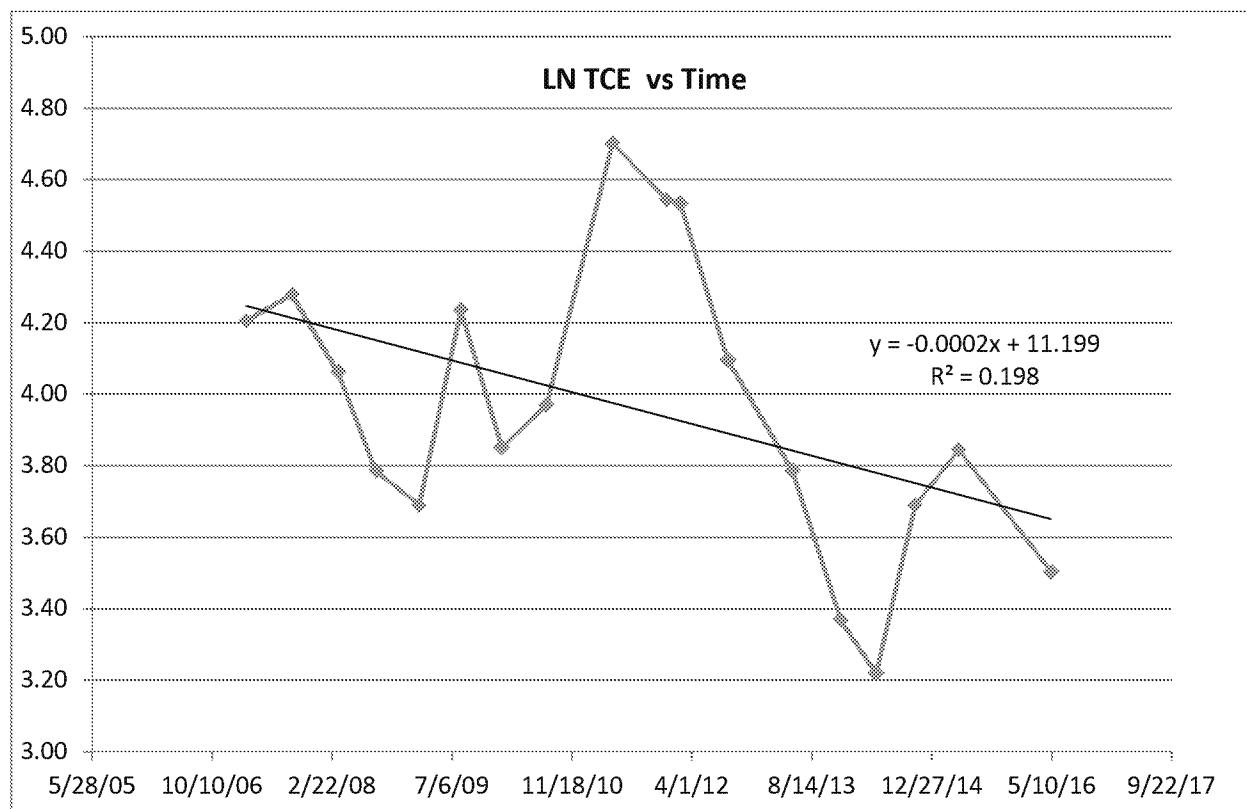
BPOW 4-2R



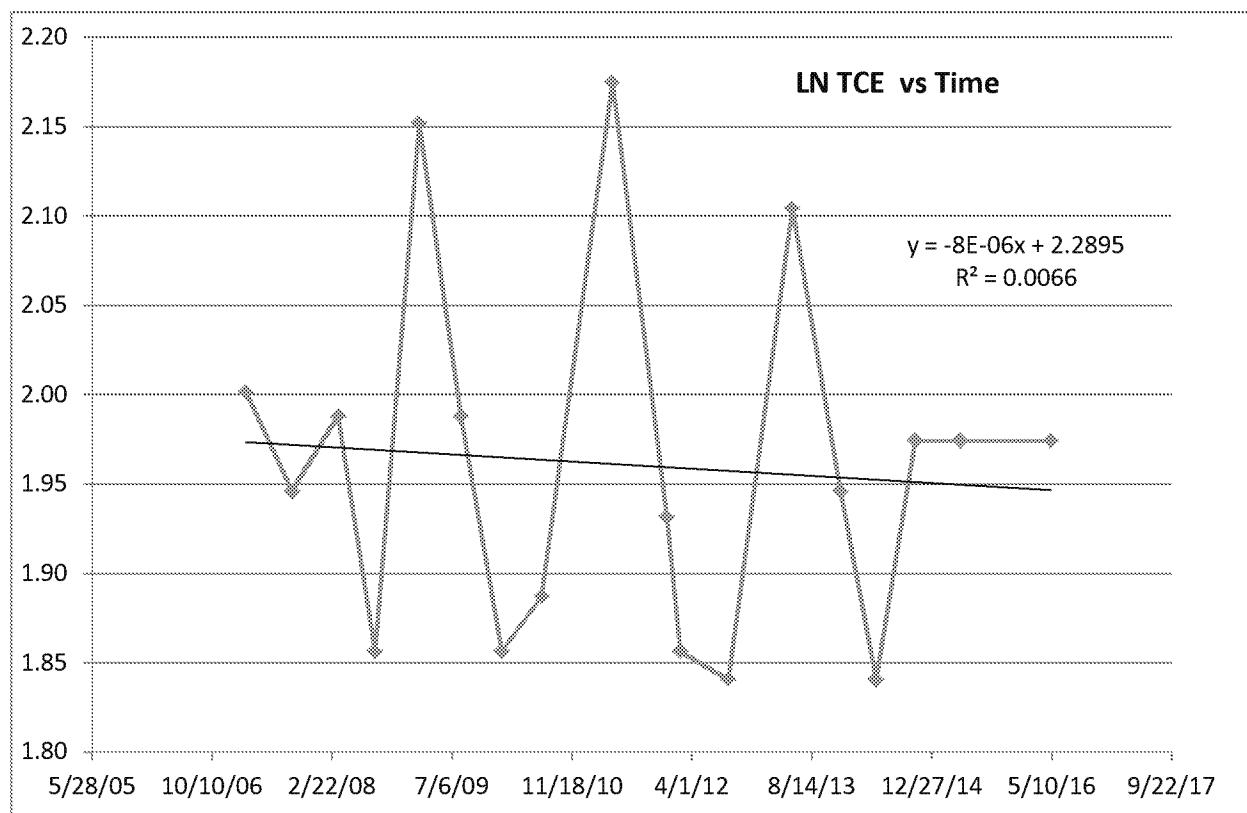
GM-15D2



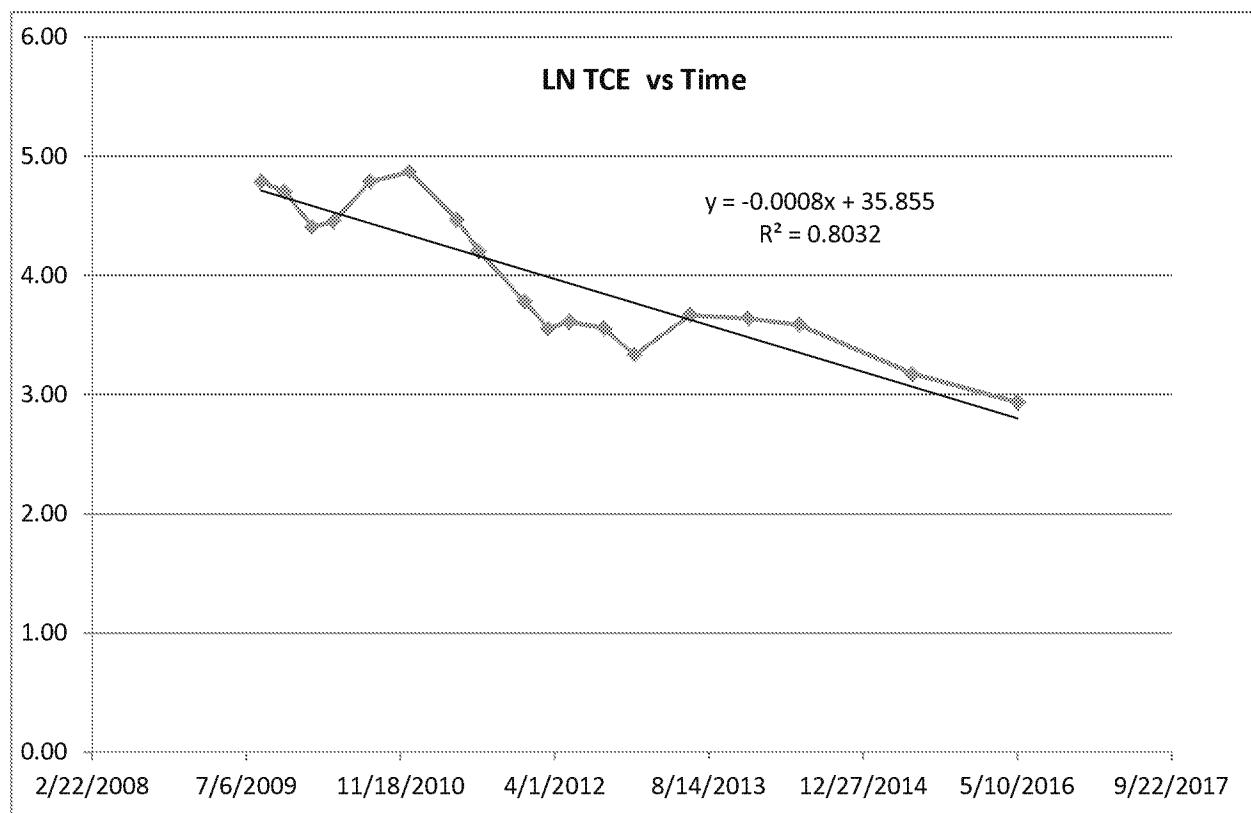
GM-73D2

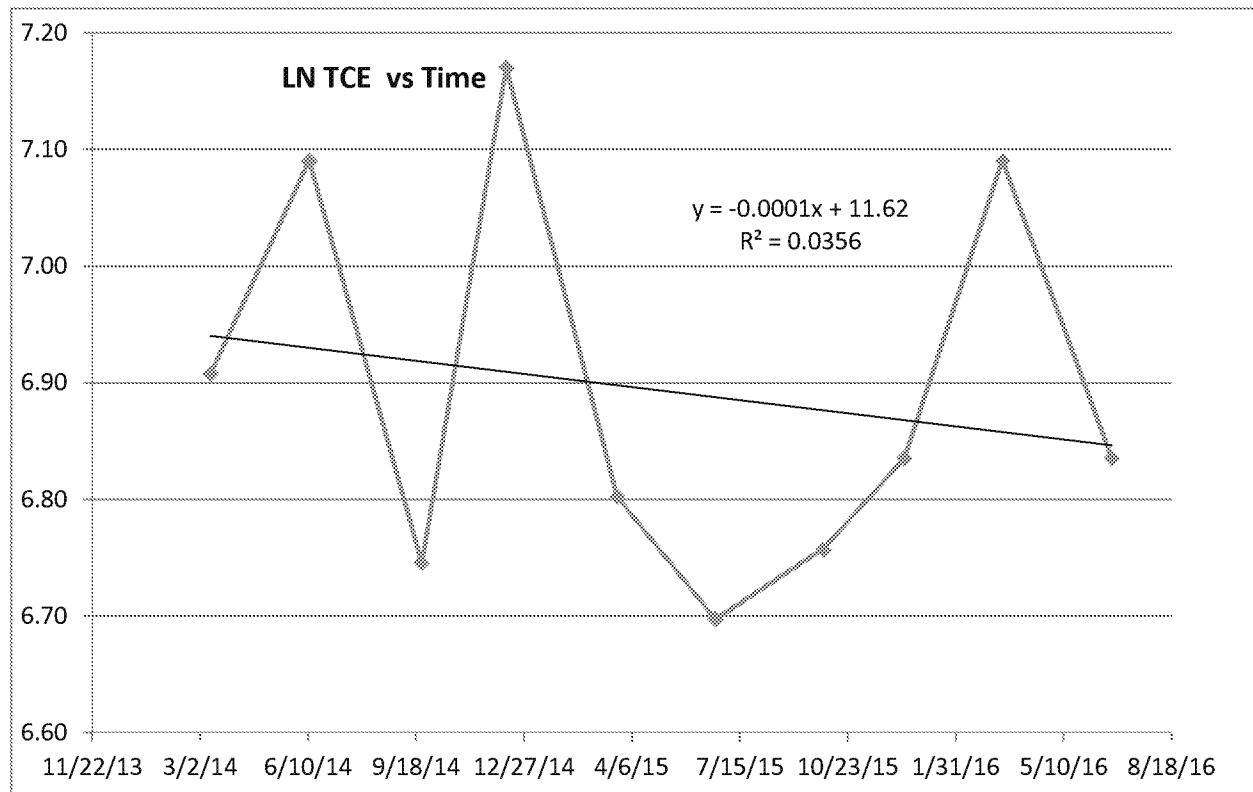


GM-74D2

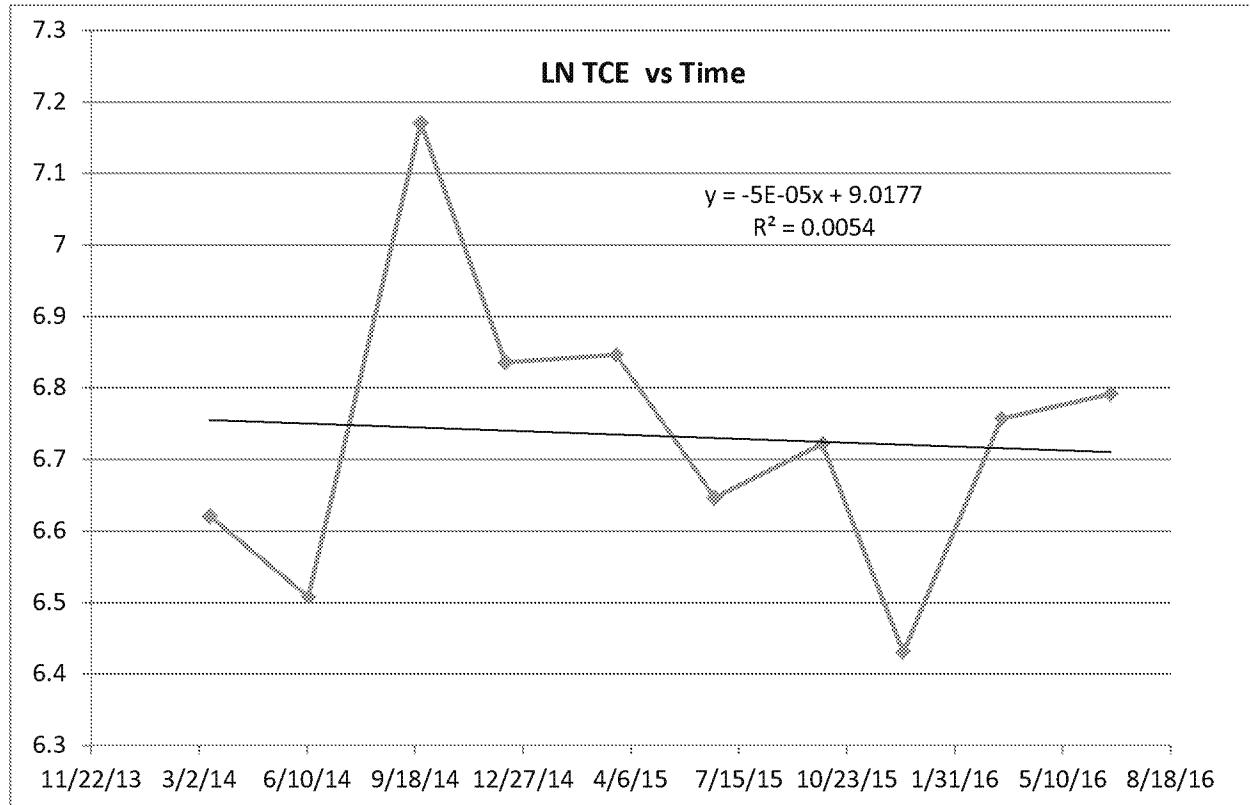


GM-75D2

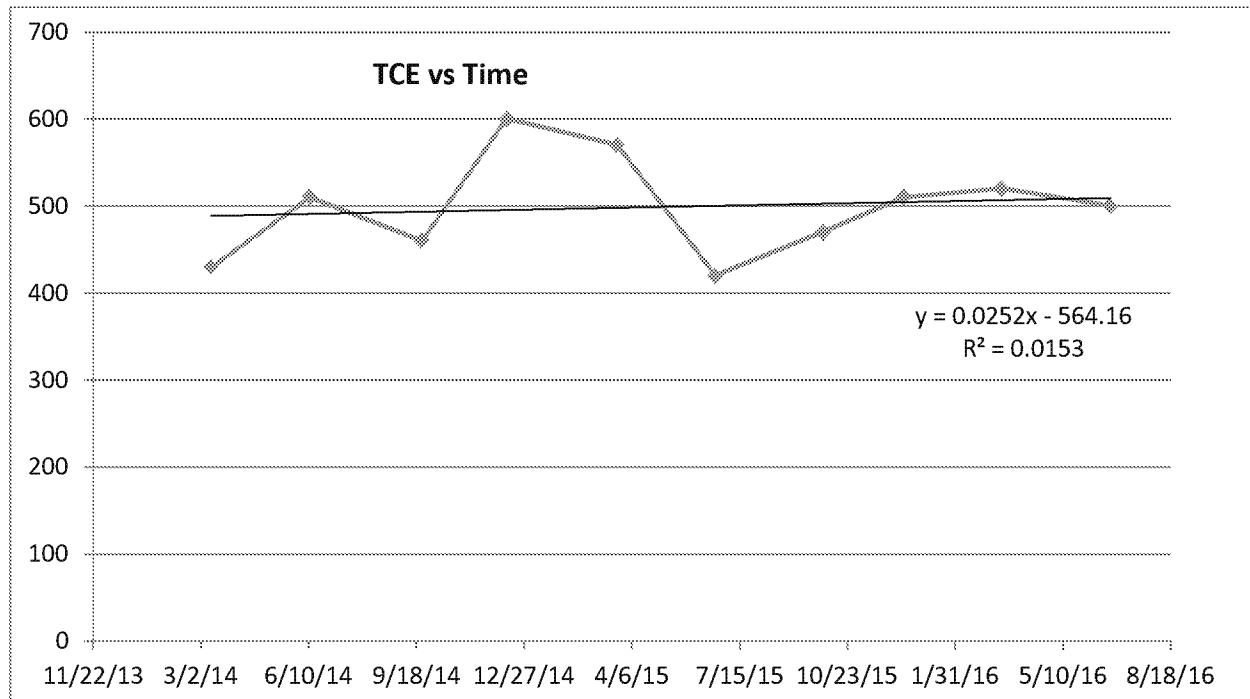


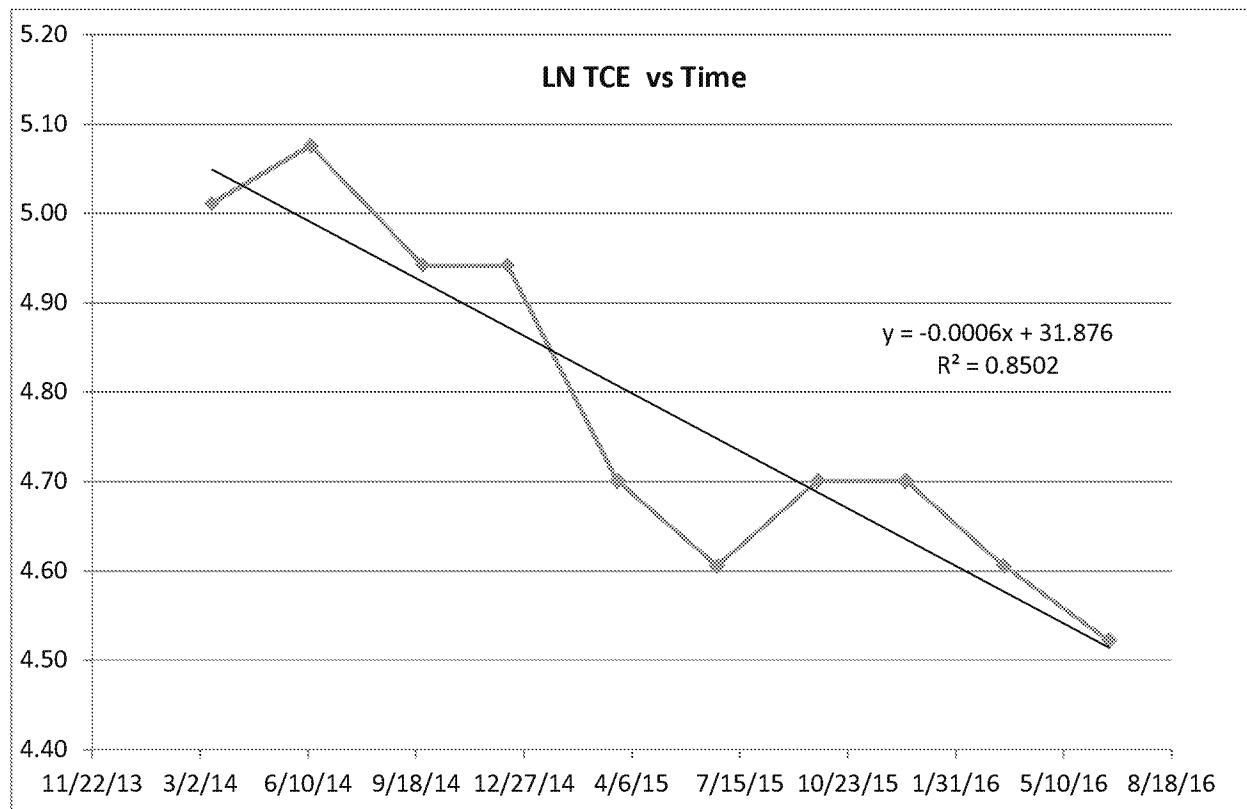
RE103D1

RE103D2

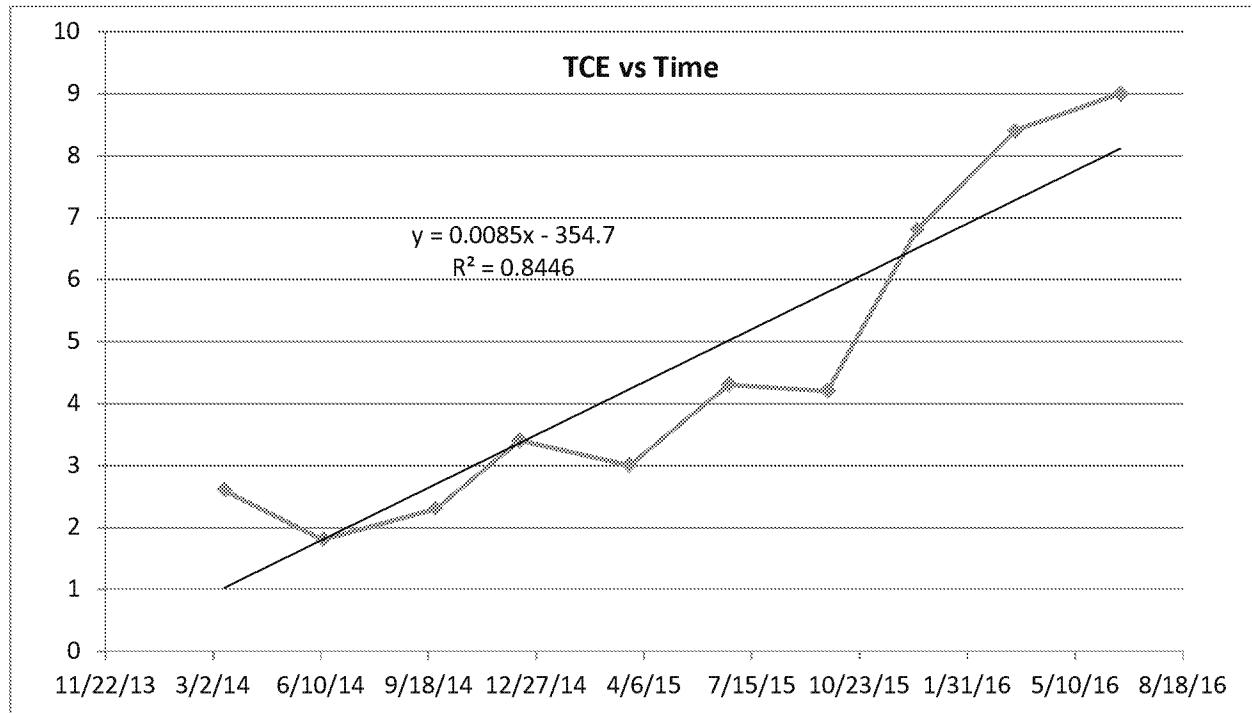


RE103D3

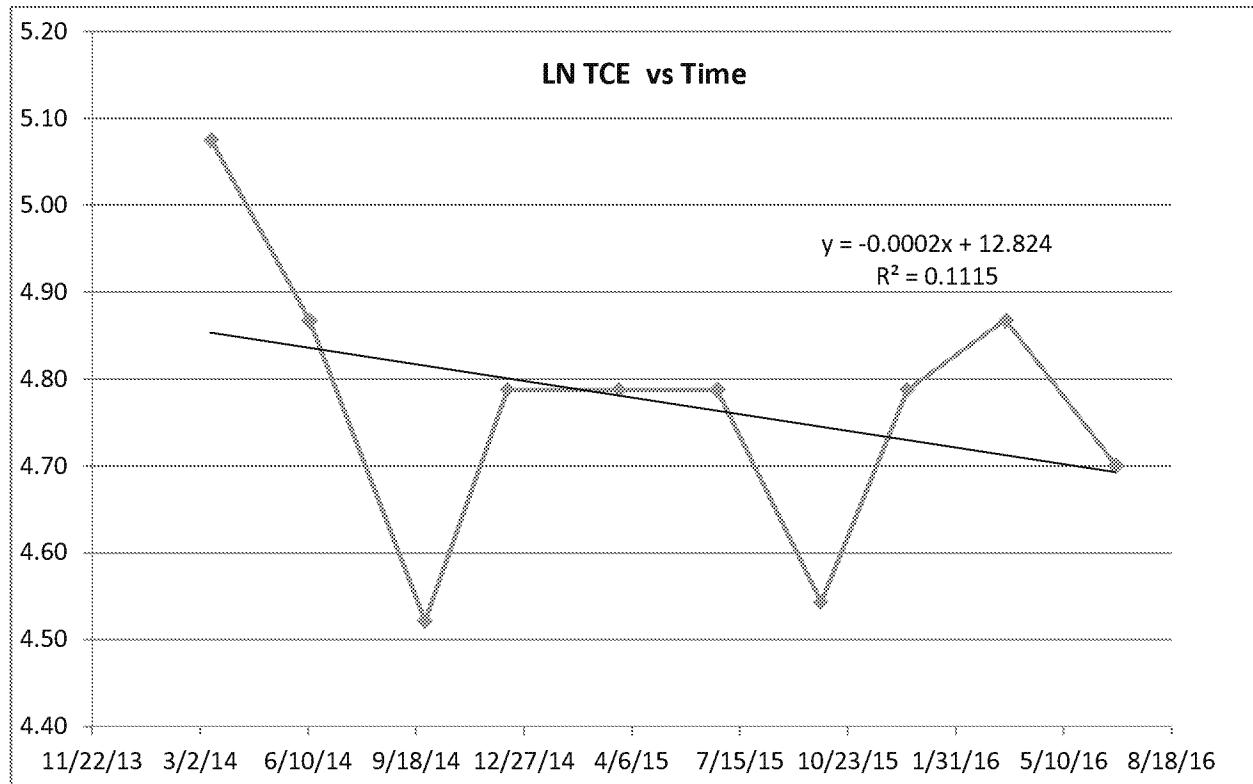


RE104D1

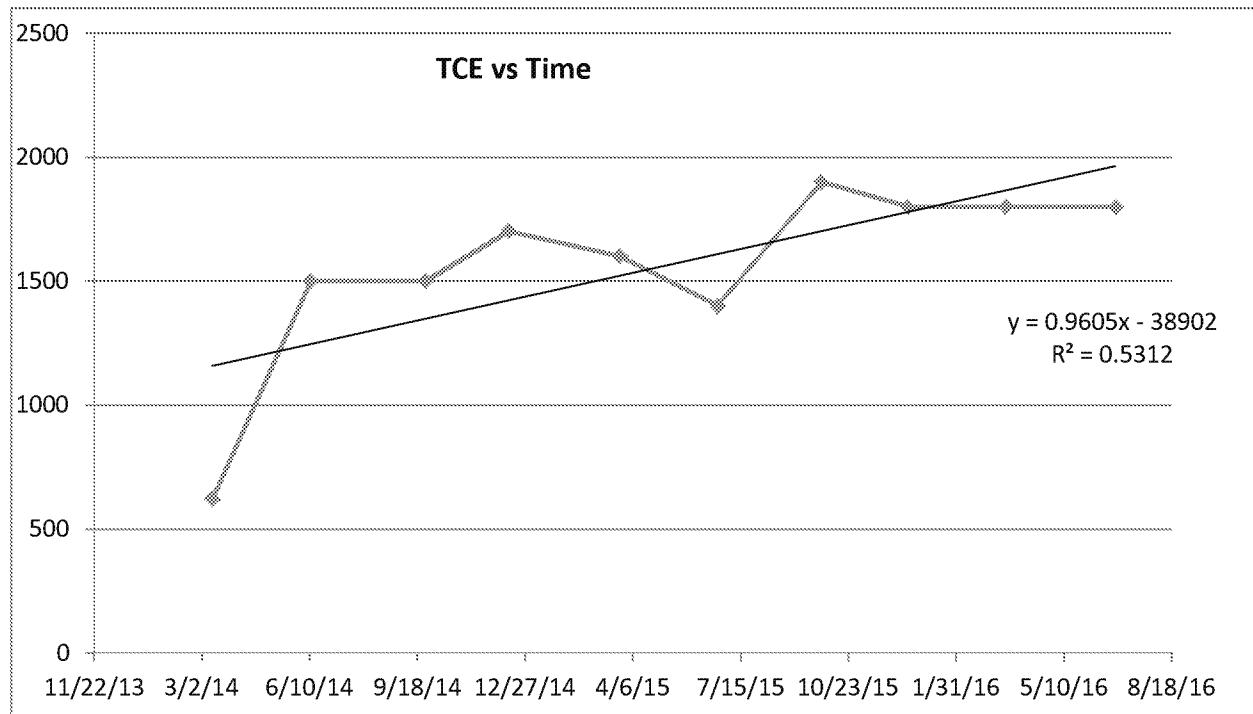
RE104D2



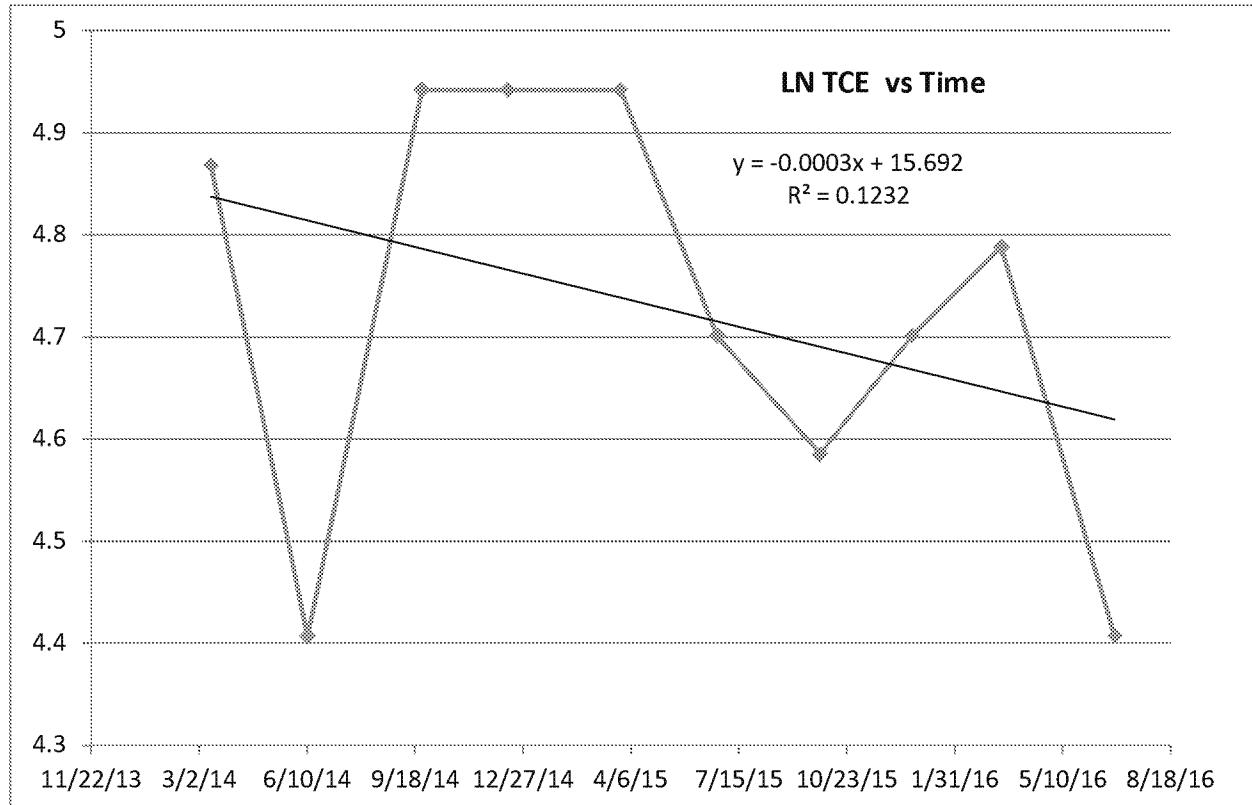
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RE104D3**

RE105D1

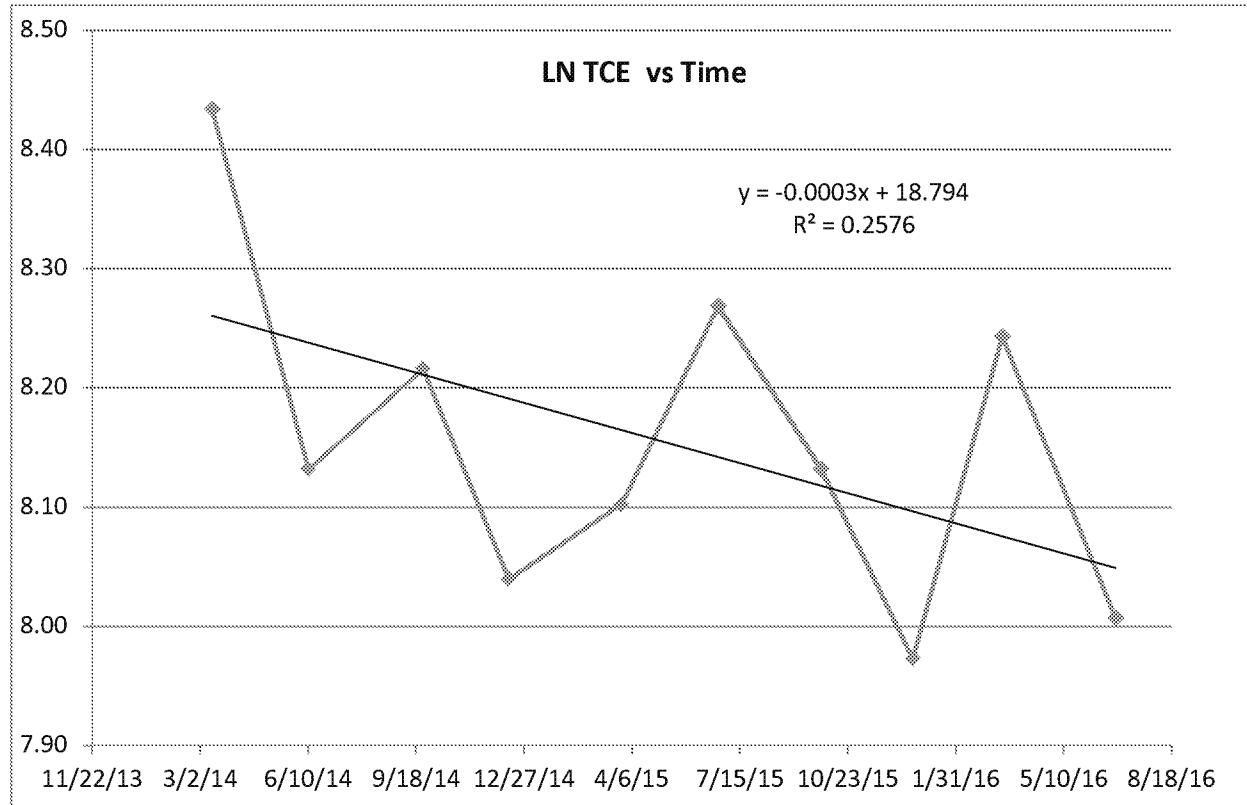
RE105D2



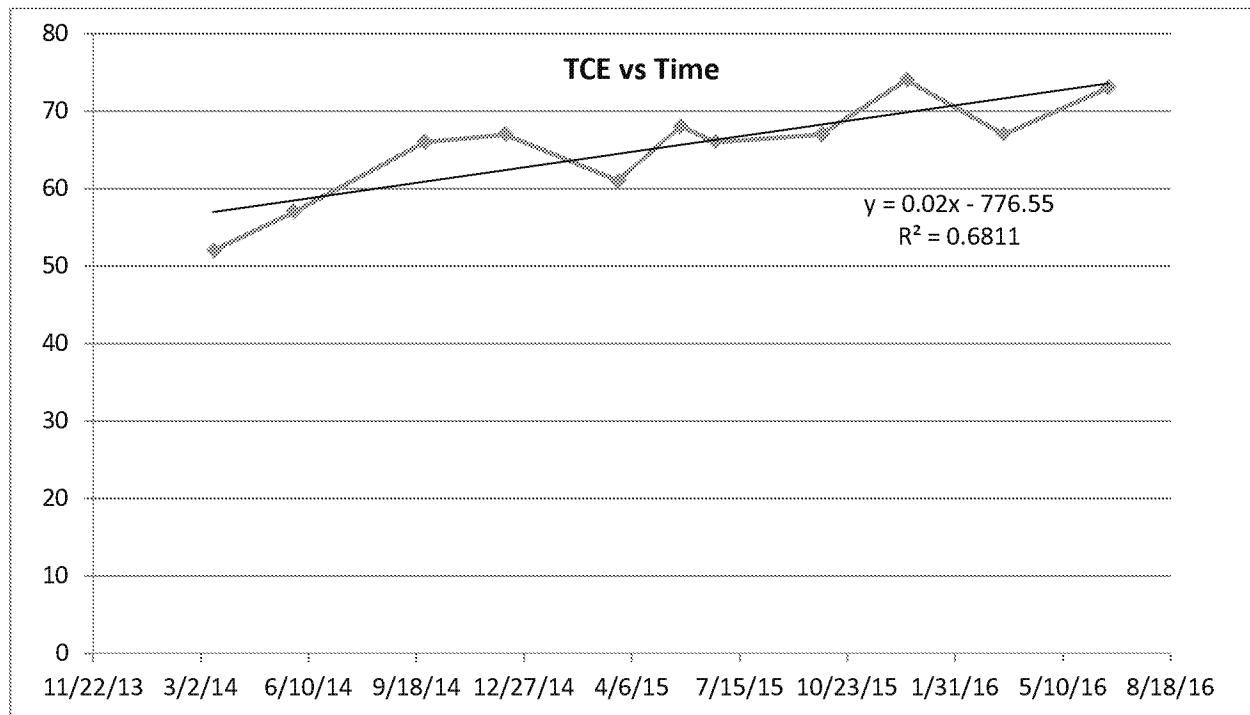
RE108D1

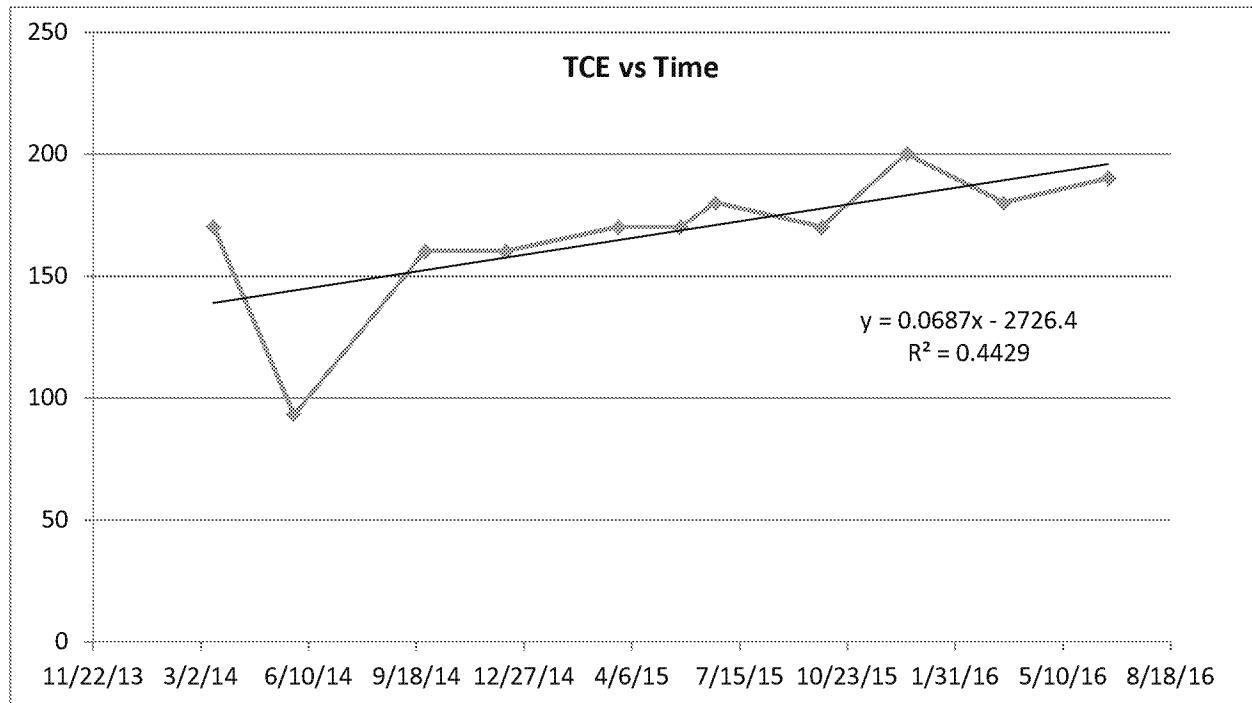


RE108D2

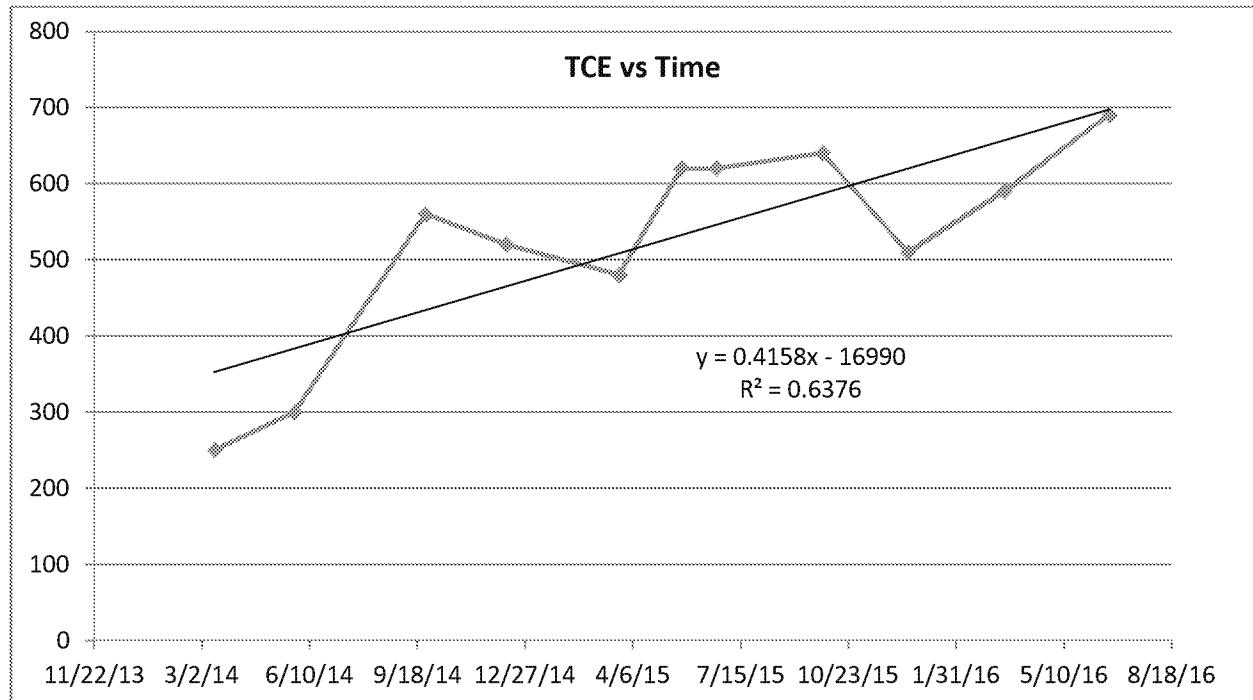


TT101D

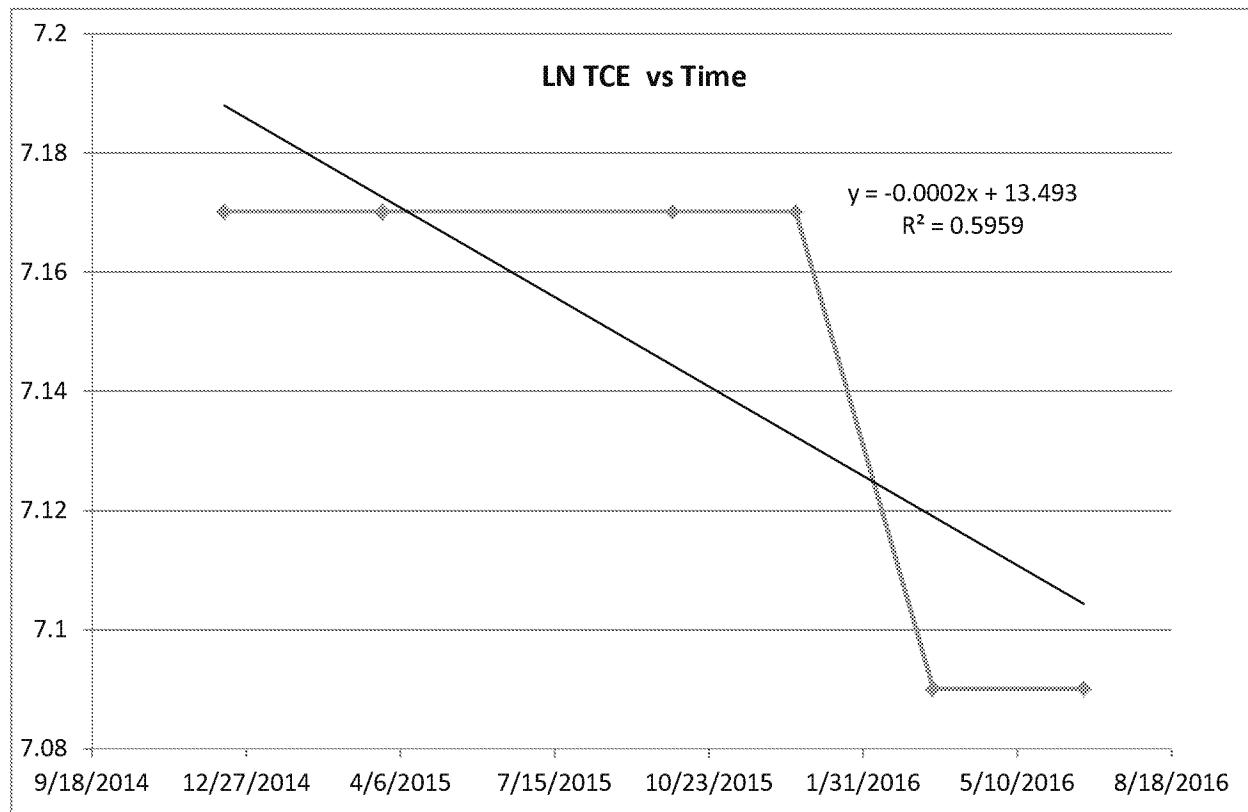


TT101D1

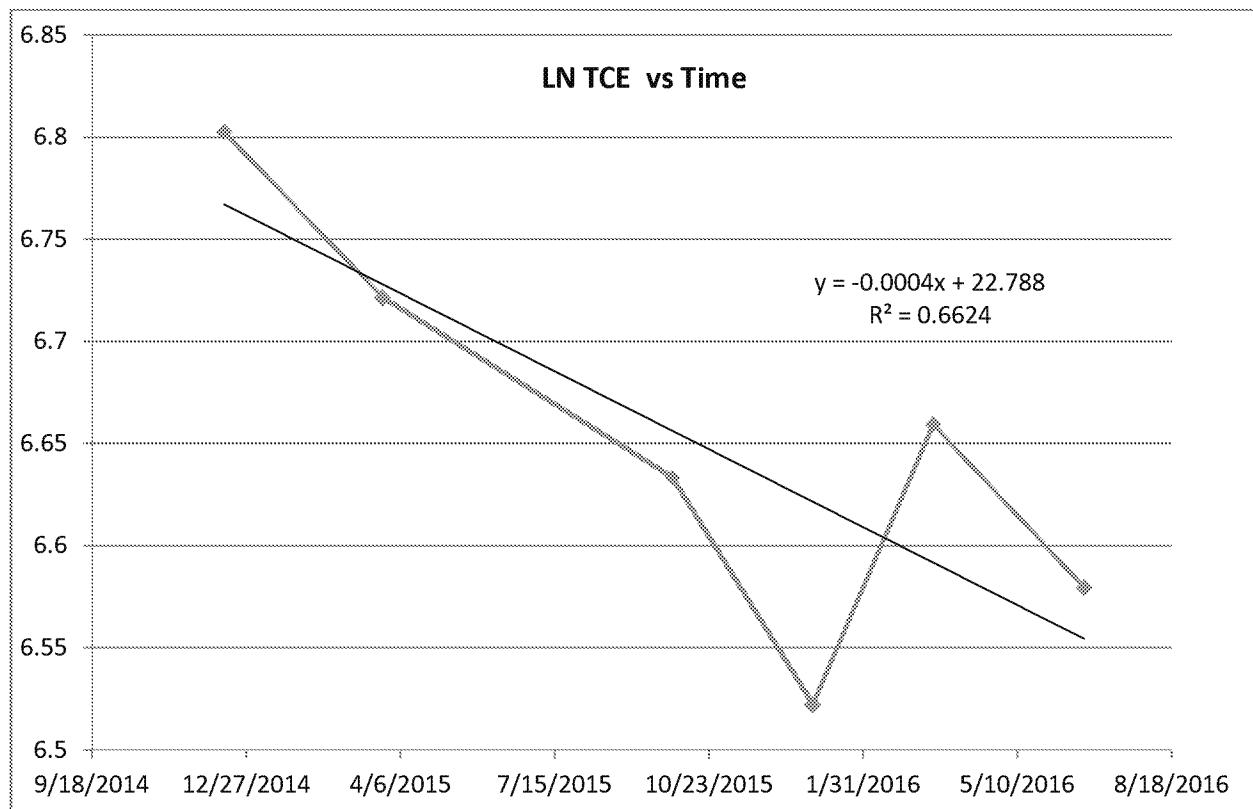
TT101D2



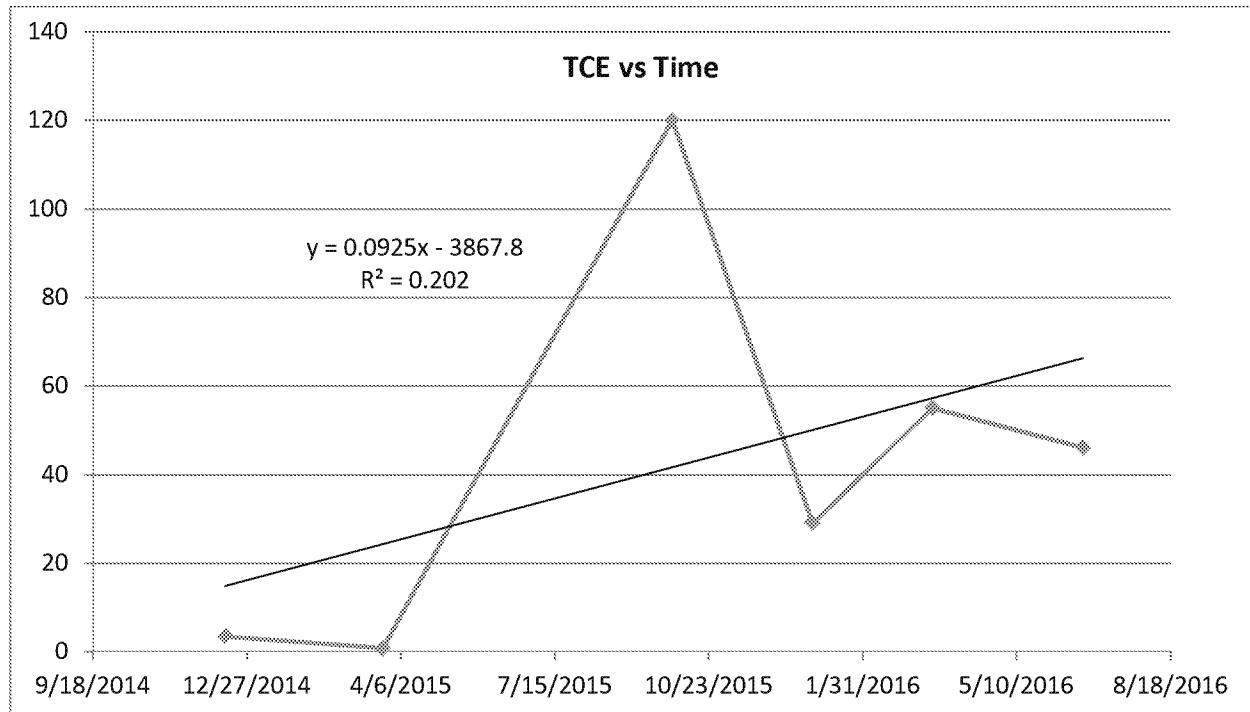
Not Tested, Non-Detect Values:
TT102D1
TT102D2

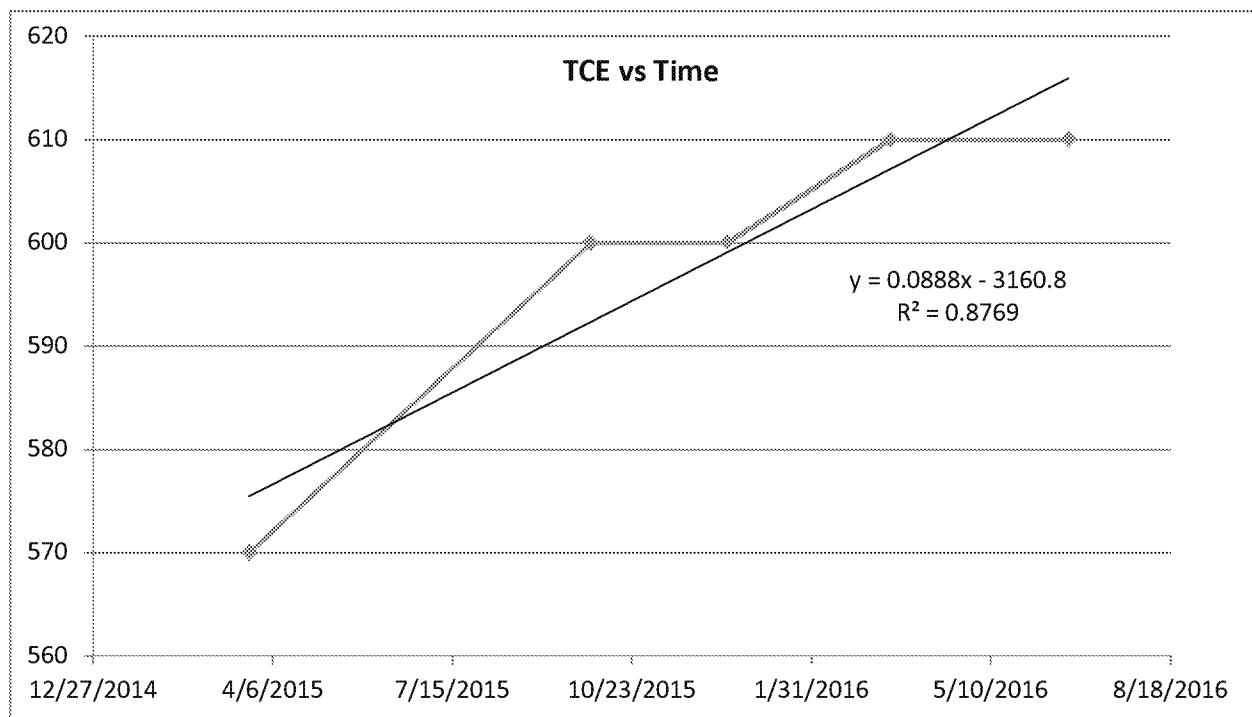
RE120D1

RE120D2

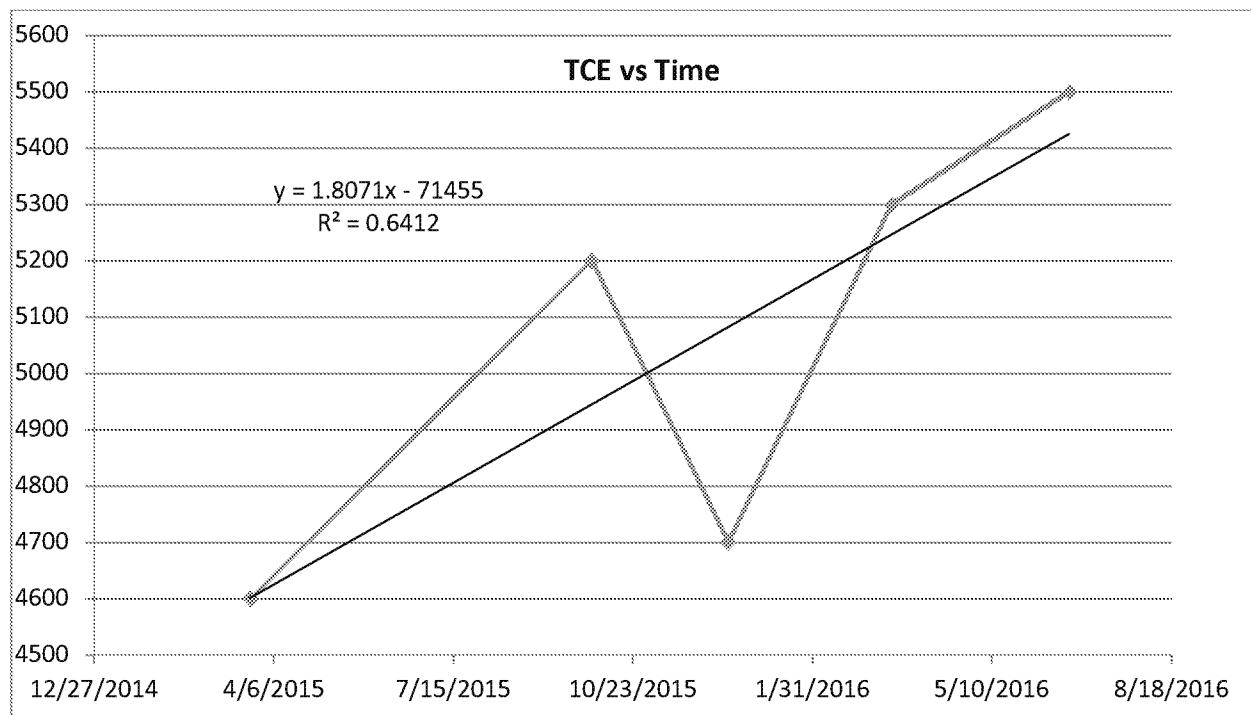


RE120D3

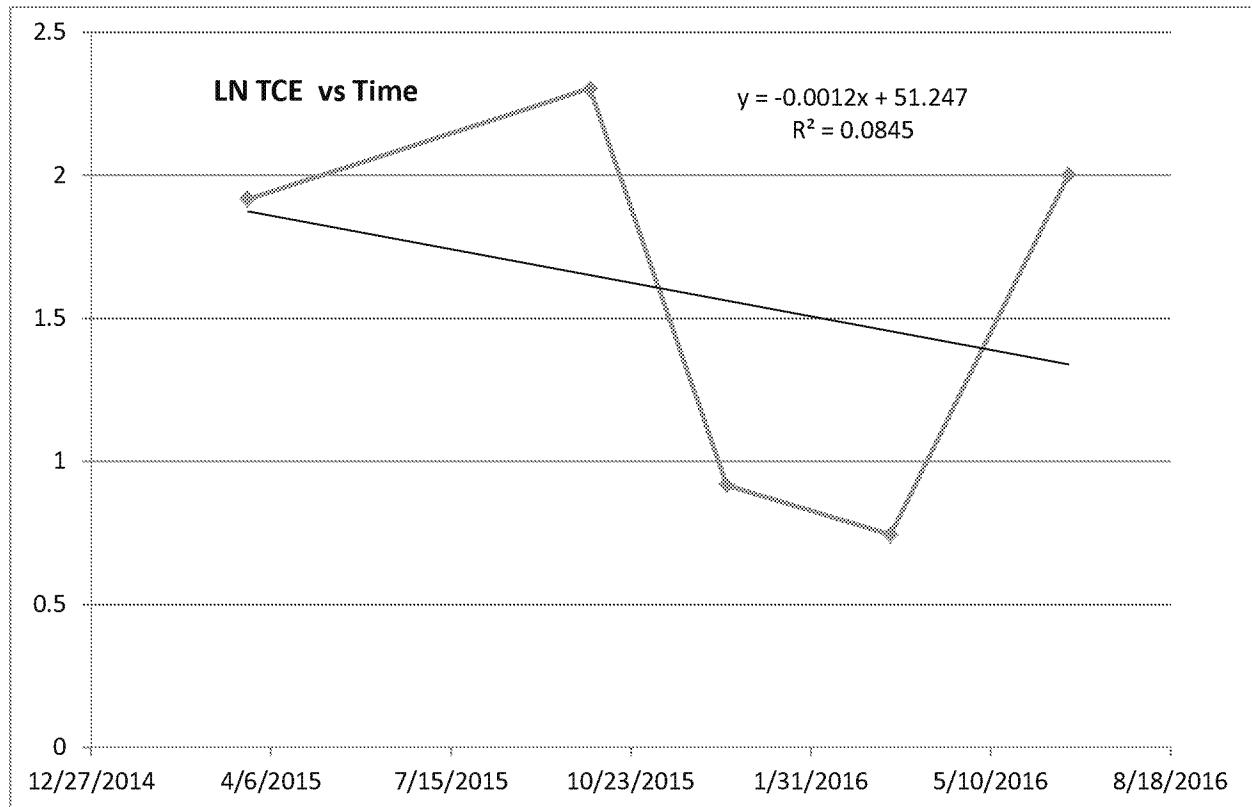


RE122D1

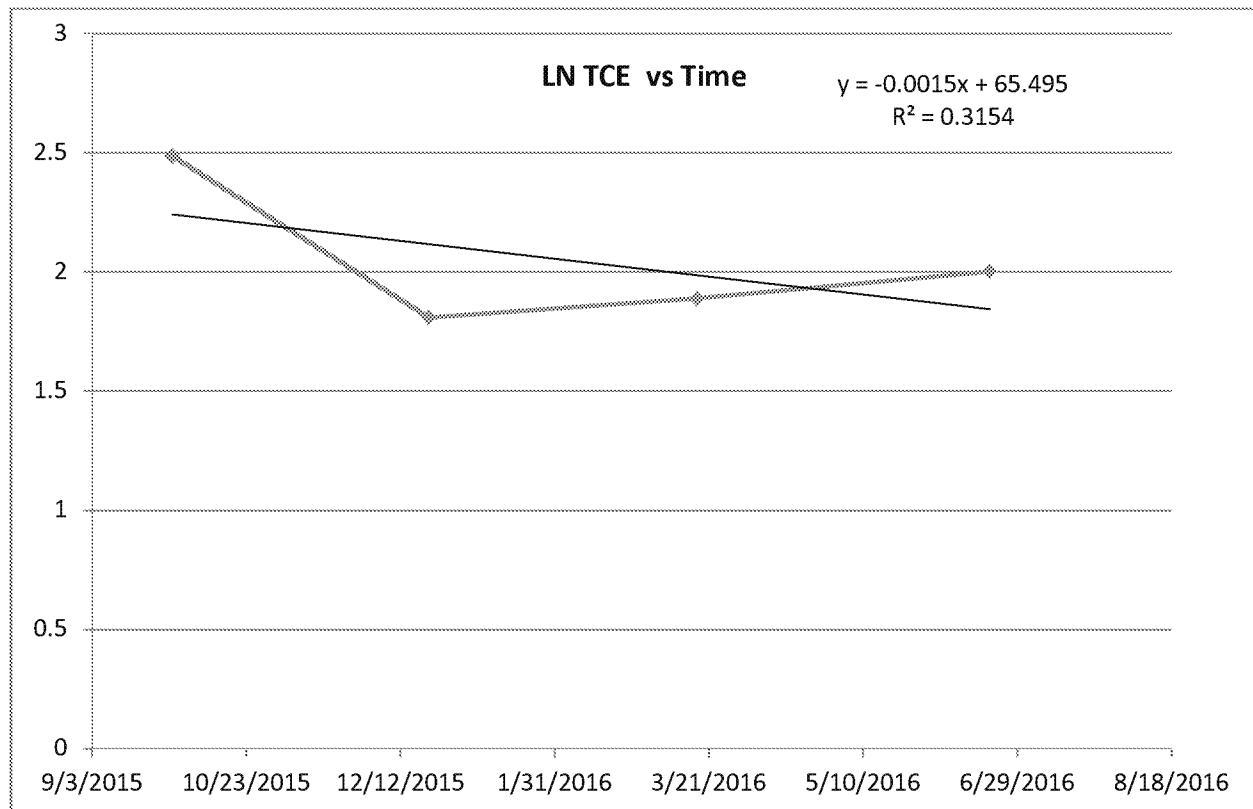
RE122D2



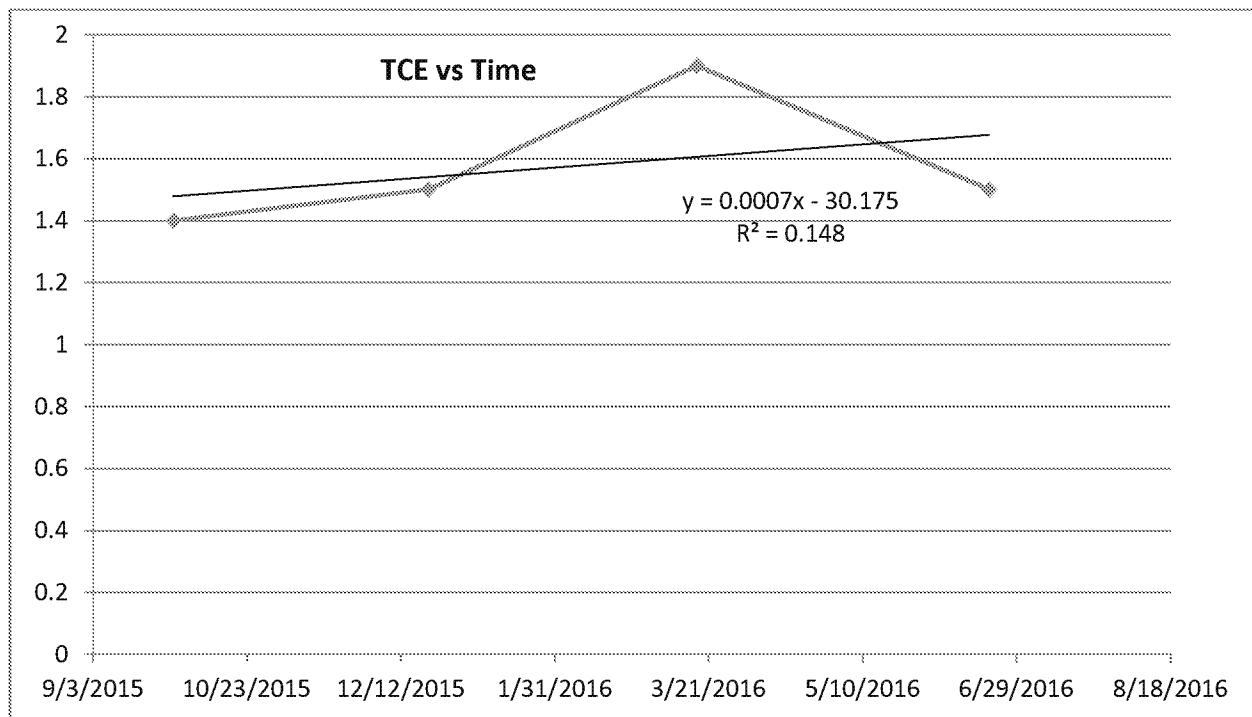
RE122D3



RE123D1



RE123D2



**Not Tested, Non-Detect Values:
RE123D3**